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LEPROSY.

MacArthur (W. P.). **Some Notes on Old-Time Leprosy in England and Ireland.**—*Jl. Roy. Army Med. Corps.* 1925. Dec. Vol. 45. No. 6. pp. 410–422. [20 refs.]

These notes originated in a proposed critical review of a recent work on leprosy, the brief account in which of the drastic measures taken against leprosy in Great Britain in the Middle Ages, on the authority of Sir James Simpson and others, are not in accordance with the studies of the author. He has read the original records of those ancient times and collected a most interesting series of notes, only the general bearing of which can be indicated here. He points out that legal powers were used for segregating lepers only in the case of town dwellers, and little real segregation was actually enforced. Quotations are given to show that divorce of lepers did not often take place, and that wills might be made by permission of the master of the hospital, and the will of a leper is quoted. [Colonel MacArthur has informed the reviewer that most of the severe laws quoted in "Leprosy" from a paper of Sir James Simpson really apply to France and not to England.] He indicates the difficulty in obtaining accurate information regarding the prevalence and prophylaxis of leprosy in the Middle Ages, and gives instances in which various writers have erroneously quoted references to other diseases as applying to leprosy, and points out that several of the lepers' houses tabulated by Simpson, over 100 in all, were found by reference to the original documents to be mere alms-houses for the sick and poor, so "no alleged leper hospital can be accepted as such in the absence of definite information regarding its original destination, and further, some knowledge of the after history of the foundation." He concludes that Creighton gives a reasonable estimate of the prevalence of the disease at its worst in the Middle Ages in England when he says: "There might have been a leper in a village here and there or one or two in a market town, a dozen or more in a city, a score or so in a whole diocese."

L. Rogers.

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Callender (Geo. R.). **The Leprosy Problem in the Philippine Islands.** —*Amer. Jl. Trop. Med.* 1925. Sept. Vol. 5. No. 5. pp. 351–358. [2 refs.]

The Culion settlement was opened in 1906, and about 900 persons are still admitted yearly, "but there are definite indications that segregation is accomplishing much better results than this figure indicates," for advanced cases are now rarely found, the admissions being nearly all early ones requiring care in diagnosis. The Health department estimate the total number at 12,000, of whom 5,600 are isolated at Culion. The average duration of the first skin lesion other than anaesthesia at the time of isolation is now 1 year and 10 months against 3 years formerly. Intensive treatment was inaugurated by General Leonard Wood in 1921. Over 4,000 were then placed under injections, since which 196 have been sent away as "cured" and 449 lepers are noted as bacteriologically negative and undergoing two years' observation period for release, "a gratifying result of the treatment methods." From personal work on the Philippine Leprosy Research Board the author states that: "It was the general opinion of the active workers that, under the conditions present, the treatment could be expected to give good results in a high percentage of the early cases, but that it was not wise to force advanced lepers to take it, and it was contra-indicated in those with tuberculosis, about 25 per cent. of the leper population." The Philippine Government is spending 5 per cent. of its income on health work, one-third going to leprosy, so an extraordinary effort is being made, but funds are not yet available for the all-important work of separating the children born to lepers from their parents from birth, and no less than 167 out of 396, or 42·2 per cent., children born in the settlement are either certainly or probably infected. The paper ends with an appeal by the Governor-General, Leonard Wood, himself a medical man, to follow the example of the British Empire Leprosy Relief Association "in making arrangements for a widespread effective campaign against this dread disease in India and elsewhere"; and he asks the American people to raise a million dollars for this purpose. [This is surely a small matter for the wealthiest nation in the universe and very little more than India has subscribed during the past year for a like purpose.]

L. R.

Sheldon (H. F.). **Leprosy.**—*S. African Med. Rec.* 1925. Oct. 24. Vol. 23. No. 20. pp. 447–453. [55 refs.]

At present there are six leper institutions in the Union of South Africa, but Robben Island is likely to be closed and the remaining 140 patients transferred to a better climate at Pretoria. The numbers detained were: in 1905, 1,491; 1910, 1,805; 1915, 2,167; 1918, 2,374; 1924, 2,135.

Between 1910 and 1917 the cases discharged as arrested numbered 275, but in the last three years, since leprosy has been under the Department of Health, about 1,000 have been discharged as uninfective. The yearly admissions during the last ten years have varied between 305 in 1913 and 562 in 1922, and averaged 436·5. Dr. Mitchell, Medical Secretary, has had inquiries made regarding the lepers still at large, which have been estimated by the magistrates at 1,845, while an estimate made by multiplying the average number segregated by 5, the average duration of the disease on discovery in years, works out

at 2,264. If the 905 arrested cases are also added, the rate for the Union is 0·74 per mille. The weak point of segregation is that it leads to concealment of the disease until infection has been spread in the family, although "it is not too much to say that all early cases of leprosy can be cured." A spot map of cases shows little leprosy in high, dry areas, which indicates the advisability of treating cases in such climates in sanatoria on the lines of tuberculosis, and, better still, at clinics in each district under experts on the lines of tuberculosis dispensaries; and he thinks that "two years' work of a small educational voluntary sanatorium for early lepers might alter the outlook of the Union."

L. R.

JEANSELME. Sur la prophylaxie de la lèpre en France. [**The Prophylaxis of Leprosy in France.**]—*Bull. Acad. Méd.* 1925. Nov. 10 & Dec. 15. Year 89. 3rd Ser. Vol. 94. Nos. 36 & 41. pp. 963–976; 1236–1240. [2 refs.]

This is the report of the Commission, composed of MM. ROUX, BALZIER, NETTER, DARIER, THIBIERGE and Jeanselme, appointed by the Academy of Medicine to consider this question, and it includes information regarding infections in other European countries from lepers returned from the tropics. In the first place the ancient endemic focus in the Maritime Alps continues to decrease spontaneously, the 33 cases known in 1913 having now fallen to 12, five of whom are in hospital. On the other hand, the number of returning lepers is increasing, and is estimated at from 160 to 200 in Paris, while 30 have been observed in Bordeaux and 39 in Marseilles in recent years; the largest numbers come from the West Indies, French Guiana, Brazil and other South American States, and New Caledonia. With few exceptions these returned lepers have not propagated the disease in Europe; only five such cases have been reported in France in recent years, five in Great Britain and Ireland in the last fifty years [three of these certainly and one other probably having been due to sleeping with a leper.—L. R.]. one in Holland, one in Italy, and five persons infected from one leper in Spain, or a total of only 18 cases in the whole of Western Europe during several decades.

After a discussion by the Academy the following prophylactic measures were advised:—(1) Compulsory notification of cases, the Colonial administrations being asked to notify the home sanitary authorities of the places of residence of all lepers in future. (2) All lepers to be submitted to domiciliary visit with regular frequent clinical and bacteriological examinations by hygiene experts to ensure that proper prophylactic measures are carried out. (3) Prohibition of the employment of lepers in handling foods, clothing, hair-cutting, teaching, domestic service, nursing, etc. (4) The provision at convenient centres of asylums for lepers under dermatological specialists; and (5) Making arrangements with leprosy infected countries to prevent the return of lepers to France.

L. R.

AUDIBERT. La prophylaxie et le traitement de la lèpre en Indochine. [**Prophylaxis and Treatment of Leprosy in Indo-china.**]—*Ann. de Méd. et de Pharm. Colon.* 1925. May–June–July–Aug. Vol. 23. No. 2. pp. 227–237.

Leprosy remains a serious scourge in Indo-china against which further prophylactic measures are necessary. Treatment met with little

success until the introduction of the ethyl chaulmoogrates; those made from *Hydnocarpus anthelmintica* (krabao) are better than those from *Taraktogenus kurzei*, and they improve the general health and heal ulcers. In addition to the provision of treatment, 4,500 lepers are now isolated in 14 leper villages, and the natives themselves also practise segregation, especially in lower Laos; but there are believed to be at least 30,000 lepers in the country, and it is necessary to consider how far improved treatment allows of modifications of the old methods of prophylaxis. It is not at present considered feasible to attract the lepers voluntarily to attend regularly at dispensaries for treatment, so special hospitals are advised for this purpose. Since it is difficult to get the patients to work at cultivation at the same time, in Annam the best plan has been found to be to provide attractive segregation villages, with good medical attendance in an attached infirmary, which will attract cases amenable to treatment; seven such are being provided to contain all the lepers who cannot be safely treated in their own homes. Only contagious and helpless mutilated lepers are compulsorily isolated; the others retain their liberty subject to their attending regularly for treatment. These institutions should be under the medical department and be near enough to important centres to allow of efficient treatment and bacteriological examinations. The separation of the children born to lepers is very difficult, since artificial feeding results in death unless skilled nursing is available, which is costly. The cultivation of *H. anthelmintica* is also being carried out to furnish supplies of pure oil for the treatment. [See paper by Alexis & Menaut below for treatment in Indo-china.]

L. R.

Marchoux (E.). Unicité ou pluralité des bacilles lépreux. [**Bacillus of Leprosy: One or More?**—*Bull. Acad. Méd.* 1925. Dec. 1. 3rd Ser. Year 69. Vol. 94. No. 39. pp. 1091–1092.

In view of his discovery in a young Haitian of a bacillus resembling that of leprosy, but which produced, on inoculation into a white rat, a disease like rat leprosy, Marchoux has made a number of experiments by inoculating fresh leprosy material into white rats and guineapigs, but with negative results except the occasional production of tubercle in the latter animals; he is continuing his efforts.

L. R.

Caputo (Vincenzo). La lepra in Calabria. Un altro caso di lepra tuberosa. [**Leprosy in Calabria. Another Case of Nodular Leprosy.**]—*Giorn. Ital. di Dermat. e Sifilol.* 1925. Aug. Vol. 66. No. 4. pp. 1198–1201. With 1 plate. [17 refs.]

This is an account of a woman, aged 43 years, who returned to Italy after a stay of 22 years in S. Paulo. She developed nodular leprosy of the left side of the face and both arms, especially the left. Antileprol was given by mouth and intravenously, but the former method was not persisted with as the patient objected to it. The injections were given in daily doses of 2 cc. of a 5 per cent. solution, 150 cc. in all, with good effects. After an interval of two months further injections were given, and the patient was able to tolerate doses of 5 cc. After another 50 cc. had been injected the nodules on

the face had almost disappeared, and one at the sclero-corneal junction, which had prevented complete closure of the lids, was much reduced, while the patient's general condition had greatly improved.

H. Harold Scott.

Tarchini (P. P.). Contributo allo studio delle lesioni ossee nella lepra anestetica. (Comunicazione preventiva.) [**Study of Bone Lesions in Anaesthetic Leprosy.**]—*Giorn. Ital. di Dermat. e Sifilol.* 1925. Apr. Vol. 66. (Year 60.) No. 2. pp. 451–453.

This is an interesting account of the bony changes as seen by radioscopy in a man of 60 years, who had suffered from the anaesthetic form of leprosy since the age of 16. The head, thorax, pelvis, hands and feet were radiographed. The most marked changes were in the extremities, especially the left foot. Here the phalanges were quite destroyed and a large part of the metatarsals, the bony change being more advanced than destruction of the soft parts. Articular contracture in leprosy showed no tendency to bony ankylosis, nor after fracture was there any sign of the formation of callus. The bony changes were unlike those of nodular leprosy, or of syphilis or tuberculosis; they closely resembled those of syringomyelia.

The author asks whether leprosy may lead to removal of lime salts from the bones, but thinks this improbable; also, whether the lesion is a destructive suppuration of bone, but pus-formation is rare. He concludes that the cause is to be found in a neuritis of the trophic fibres, and consequent nutritive changes.

H. H. S.

Businco (Armando). Su le cause di morte nella lepra (considerazioni anatomo-cliniche ed epidemiologiche). [**The Causes of Death in Leprosy.**]—*Pathologica.* 1925. Oct. 15. Vol. 17. No. 406. pp. 545–550. [19 refs.]

The causes of death in nine cases of leprosy on which autopsies were performed by the author proved in six instances to be pulmonary affections, either pneumonia, bronchopneumonia, or gangrene due to sepsis entering by a disorganized ulcerated larynx. Other causes were sepsis by way of a trophic ulcer of the foot, terminating in meningitis, renal disease and myocarditis of leprous nature, and marasmus in a case of anaesthetic leprosy of 31 years' duration. He attempted by culture and experiment to determine what part the *B. tuberculosis* played in the pulmonary lesions, but without any very definite results. He shows by statistics culled from other writers that tuberculosis is returned as the cause of death in a large proportion of cases of leprosy.

H. H. S.

Balbi (E.). Colesterinemia nella lebbra. [**Cholesteraemia in Leprosy.**] —*Giorn. Ital. di Dermat. e Sifilol.* 1925. Apr. Vol. 66. (Year 60.) No. 2. pp. 427–435. [4 refs.]

The antihaemolytic and antitoxic action of cholesterin has been demonstrated with tetanus, diphtheria, cobra venom and other poisons, while the action of tuberculin is lessened by the same substance. It has also been shown that in tuberculous patients the cholesterin content of the blood falls and rises *pari passu* with relapse and improvement. The author has applied these findings to leprosy.

He estimated the degree of cholesteraemia in a number of lepers, of the nodular, anaesthetic, and mixed types, and found that the amount varied with the patients' general state, and not with the type *per se*. He also found that the administration of chaulmoogra oil increased the cholesteraemia, and he suggests that the estimation of the cholesterin content of the blood should be made use of in determining the gravity of the disease and the reaction of the patient to treatment.

H. H. S.

MARIANI (G.). Nuove osservazioni sulle reazioni provocate sperimentalmente con materiale lebbroso nell' uomo. [**Fresh Observations on the Reactions provoked Experimentally in Man by Leprous Material.**]—*Giorn. Ital. di Dermat. e Sifilol.* 1925. Apr. Vol. 66. (Year 60.) No. 2. pp. 402–426. With 3 plates.

In this article the results of three main series of experiments are recorded. In the first, leprous patients were inoculated intradermically with material prepared from a leprous nodule in such a way as to destroy the pathogenicity of the bacilli. Alcoholic and aqueous extracts of a nodule were made by trituration, diluting with saline, and exposing to 60° C. for two hours on two occasions at 48 hours' interval. The final emulsion was subjected to 5 per cent. antiformin for 2 hours, centrifuged and diluted to a faint opalescent fluid.

The results of inoculation of the aqueous antigen were variable and uncertain. Cases of anaesthetic leprosy remained unaffected; nodular cases gave irregular results, but on the whole analogous to those obtained by the use of 0·1 per cent. tuberculin. With alcoholic antigen the reaction was more intense and less fleeting, but a similar effect was produced in non-leprous subjects. The antiformin suspension gave results more specific than either of the others. Dermal injection of avirulent bacillary emulsions gave definite reactions, which were more intense according to the depth and amount of injection.

In the second series virulent leprotic material was inoculated into a non-leprous subject, a man of 60 years with an epithelioma of the face. The effects of the aqueous, alcoholic and antiformin extracts were either very slight or altogether negative. The bacillary emulsion produced a more virulent suppurative reaction and a soft nodule the size of a grain of maize which cleared up in about 25 days. Inoculations were made intradermically after scarification, and hypodermically. The patient suffered from transitory attacks of fever, but his general condition, taking into account the epitheliomatous affection, did not appear to suffer. In the fifth month he complained of headache, general malaise and joint pains with pruritus, but repeated examination of the blood failed to show any lepra bacilli. He was under observation for six months in all.

A third series consisted of inoculation into leprous and non-leprous subjects of sterilized material from conditions other than leprosy, such as non-ulcerated lupus and syphilitic lesions. It is not easy to see the precise value of such experiments, but, as might be expected, the reactions were of the suppurative and eliminative type.

In all cases histological examination of the tissues at the site of inoculation were made and there are excellent plates depicting the findings.

H. H. S.

Reenstierna (M. J.). Reproduction expérimentale de la lèpre chez les singes inférieurs. [**Experimental Reproduction of Leprosy in the Lower Monkeys.**]—*C. R. Acad. Sci.* 1925. Nov. 23. Vol. 181. No. 21. pp. 828–830. [1 ref.]

The material from several young leprous nodules, proved free from tubercle bacilli by inoculation into guineapigs, has been injected into three Chinese Bonnet monkeys (*Macacus sinicus*) and into nine *Macacus rhesus* under the skin and into the nasal mucous membrane, and in one animal into the testis, two of the monkeys being again inoculated from another leper nine months later. After an incubation period of 37 to 45 days three of the Bonnets developed several nodules from the size of a pea to that of a plum on the skin and one in the testicle, and two inoculated a second time showed nodules after 19 to 22 days. The nodules persisted for 40 to 62 days, and in one case up to seven months, and resembled in colour those of human cases. When at their full development five more monkeys were inoculated from the first nodules, but two died and the other three remain free from signs of the disease. Microscopical sections of nodules showed numerous acid-fast bacilli arranged in bundles like those of leprosy, together with histological changes like those of leprosy, large cells containing many bacilli being seen in some sections, and he concludes that he has produced leprosy in the lower monkeys by inoculation.

L. R.

Rodriguez (Jose N.). **The Disturbances of Cutaneous Sensibility in Leprosy.**—*Philippine Jl. Sci.* 1925. Aug. Vol. 27. No. 4. pp. 455–481. With 1 text fig. [32 refs.]

The writer states that, as far as he is aware, Hopkins is the only worker who has studied sensation in leprosy in the light of the investigations of Head and Rivers, with inconclusive results, so he records in this paper his own researches on the subject. [He appears to be ignorant of Professor Monrad-Krohn's book on the subject and the paper of K. K. Chaterji in the Proceedings of the Calcutta Leprosy Conference of 1920.] He records the result of a careful study of 200 cases of leprosy with 800 neurological examinations, which have led him to the following conclusions :—

"1. Not all the cutaneous lesions of leprosy are anaesthetic. Sixteen per cent. of infiltrations do not show any disturbance of the cutaneous senses.

"2. The anaesthesia of leprosy is fickle and variable ; several examinations are necessary to determine its real extent and character.

"3. Distinction should be made between the sensory disturbances in the skin lesions and those independent of all cutaneous manifestations.

"4. The character of the anaesthesia depends on whether it is located in a macule, an infiltration, or a skin free from lesions. In macules there is, as a rule, early loss of epicritic sensibility ; in nodules and infiltrations the anaesthesia is very variable ; and in a skin free from eruptions a partial dissociation of the syringomyelic type is effected. These differences suggest the possibility that the cutaneous nerves may be involved in various ways, depending on the character of the overlying skin lesion.

"5. The anaesthesia shows definite improvement under ethyl ester treatment although, as is to be expected, it is not as well marked as the improvement in the cutaneous lesions.

"6. In countries where leprosy is endemic, the possibility of this disease should always be considered in every case presenting symptoms of paraesthesia such as numbness, prickling, formication, etc.

"7. Although the absence of anaesthesia does not exclude leprosy, the touchstone in doubtful cases, from the clinical standpoint, is its presence in some cutaneous lesion or in some skin area.

"8. The final confirmation of the diagnosis is the presence of the specific organism in the lesions or on the nasal septum."

L. R.

TSCHERNOGUBOW (N. A.) & PAWLOW (N. F.). Zur Klinik der Lepriden. Ein Fall von Lichen leprosus. [**Clinical Study of the Leprids. A Case of Lichen Leprosus.**]—*Dermat. Woch.* 1925. Dec. 5. Vol. 81. No. 49. pp. 1771–1776. With 1 text fig.

The authors give a full history of a case showing changes of the skin, produced by the vital activity of lepra bacilli, similar to analogous changes that are produced by *Spirochaeta pallida* in Lichen syphiliticus. They therefore claim it as a genuine leprid which they propose to call Lichen leprosus. The condition resembled the lichens of various other aetiologies (L. scrofulosorum, L. syphiliticus, etc.) not only in the clinical, but also in the histological picture. One peculiarity of the rash, its slight visibility to the naked eye, also characterizes to a certain extent the other rashes belonging to the "lichen" group (especially L. scrofulosorum).

L. R.

URBINO (G.). Le traitement chimiothérapique de la tuberculose et de la lèpre. [**Chemotherapy of Tuberculosis and Leprosy.**]—*Presse Méd.* 1925. Oct. 7. Vol. 33. No. 80. pp. 1332–1334. [18 refs.]

This paper deals mainly with cuprocyanides in tuberculosis and leprosy, and states that MATTA and DEVOTO have treated 20 cases of leprosy in Italy by this preparation intravenously with remarkable improvement, not less than that obtained with chaulmoogra oil and antileprol. The results are thus in agreement with the earlier Japanese trials of this preparation, absorption of nodules, breaking down of the bacilli and improvement in the general health of the patients being noted. Two milligramme doses are given every other day up to 22 to 36 injections.

L. R.

DENNEY (Oswald E.), HOPKINS (Ralph), WOOLEY (Jerald G.) & BARENTINE (Boyd G.). **The Administration of Mercurial Preparations in Leprosy. Preliminary Report I.—Mercurochrome Soluble 220.**—*Public Health Rep.* 1925. Aug. 28. Vol. 40. No. 35. pp. 1795–1808. With 4 plates. [7 refs.]

Mercury preparations have from time to time been reported as having a favourable action in leprosy, and in March, 1924, YOUNG & HILL reported good results from intravenous injections of mercurochrome in septicaemia, so this drug was tried in a leper with gangrene of one foot with temporary improvement in the local condition; 44 lepers were then put on the treatment, 20 being advanced active cases, 16 with moderately advanced active symptoms, 6 early active ones, and 2 with no signs of activity as controls. At first 5 milligrammes per kilo weight was the dose, but as this was found to produce very severe febrile reactions it was reduced to 2·5 milligrammes per kilo

of a standard 1 per cent. solution of mercurochrome in freshly distilled and autoclaved water, prepared for each day's use, and injected intravenously once a week, and continued for over a year.

	Unchanged.	Slight improvement.	Moderate improvement.	Marked improvement.
Results ...	7	6	6	16

The cases showing marked improvement are described, either great improvement in the general health or subsidence of certain leprous manifestations occurring. Illustrations of four cases show diminution of the nodules or healing of ulcers; very definite improvement in some of the secondary lesions was early apparent with healing of nodules and cleaning up of ulcers, and occasionally softening and absorption of nodules, but trophic ulcers responded more slowly, and symptoms referable solely to advanced anaesthetic leprosy were not appreciably affected. An interesting point is that in approximately half the cases previously showing occasional attacks of leprous fever, sometimes after two or three injections the febrile reactions were modified by a sharp decline of the temperature within 12 hours and almost complete failure of evanescent nodules to appear, and in a few cases the reactions have not recurred. The general health improved most during the first few months, but less rapidly later. In cases with pulmonary tuberculosis no good, and possibly some harm, resulted. The trial is being continued, and the effects already obtained in some advanced cases raises the hope that this drug may prove of definite value.

L. R.

LEGENDRE (F.). Essai de traitement de la lèpre par "l'éparséno" ou préparation 132 du Dr. Pomaret. [**Trial of Eparseno in Leprosy.**]—*Ann. de Méd. et de Pharm. Colon.* 1925. May–June–July–Aug. Vol. 23. No. 2. pp. 347–350.

The writer treated four cases of leprosy in Madagascar with eparseno in as large doses as the patients would stand, one showing serious toxic symptoms, and observed a certain amount of benefit in improving the general health and lessening pains. The results so far have been sufficiently definite to make the patients desirous of continuing the injections.

L. R.

VAN DEN BRANDEN (F.). L'éparséno ou préparation 132 du Docteur Pomaret dans le traitement de la lèpre. [**Eparseno in the Treatment of Leprosy.**]—*Bull. Soc. Path. Exot.* 1925. July 8. Vol. 18. No. 7. pp. 514–516.

The doses recommended by CHARTES and HASSON could not be borne by the patients, but in the doses used in four patients some temporary clinical improvement with healing of ulcers and fading of macules was obtained. The improvement, however, was not maintained, and new lesions appeared in some after a prolonged course, so the treatment failed.

L. R.

Delamare (G.). Deux cas de lèpre mixte éparséno-résistante. [**Two Cases of Mixed Leprosy resistant to Eparseno.**]—*Progrès Méd.* 1925. June 13. No. 24. pp. 896–901. [4 refs.]

The writer reports two typical moderately-advanced cases of mixed leprosy, one with a positive and one with a negative Wassermann reaction, in both of which eparseno, pushed to produce toxic symptoms, failed to produce any alleviation of the condition, although severe reactions were caused, and he concludes that the drug has no specific action in leprosy. He advises its use in moderate doses only in cases complicated by syphilis, as he considers this arsenical preparation of no more value in leprosy than its predecessors 606 and 914.

L. R.

Aoki (T.). **The Value of Iodin in the Diagnosis and the Treatment of Leprosy.**—*Japan Jl. Dermat. & Urol.* 1925. Sept. Vol. 25. No. 9. English summary pp. 95–96. [In Japanese pp. 724–767.]

The writer reports on the intravenous use of sodium iodide in a 5 per cent. solution, beginning with about 1 cc., and increasing the dose at five-day intervals, as a diagnostic measure. Of 22 cases, 8 with papular eruptions reacted to doses of under 10 cc., and 12 out of 14 macular and mixed cases reacted with doses under 20 cc., 1 to 28, and 1 to 32 cc., while 22 uninfected patients showed no reaction to doses of more than 40 cc.; he regards it, therefore, as of diagnostic value. As a rule, a general reaction is observed within a few hours with slight fever to, at most, 38° C., and feeling of burning in the face, with weakness, dullness and headache. He also regards the drug as of curative value if carefully regulated to produce slight reaction in each case; overdosage may do harm by setting free the bacilli; 10–14 days' intervals are allowed in treatment.

L. R.

Alexis (M. L.) & Menaut (B.). Recherches sur le traitement de la lèpre par le krabao (*Hydnocarpus anthelmintica*, Pierre). [**The Treatment of Leprosy by Krabao** (*H. anthelmintica*).]—*Ann. de Méd. et de Pharm. Colon.* 1925. May–June–July–Aug. Vol. 23. No. 2. pp. 201–226. [1 ref.]

In 1907 it was found that some lepers in Cambodia had improved under an indigenous treatment, the principal ingredient of which was krabao, the kernels of the seeds of *H. anthelmintica*, which grows wild in Indo-china and neighbouring countries. Laboratory investigations of the seeds have therefore been made, the whole of the kernels, and not only the oil pressed from them, having been taken as the basis, and ethyl esters of the fatty acids have been made in much the usual way, details of which are given. Unripe seeds contained a definite amount of hydrocyanic acid, but only a trace was found in the ripe ones. Notes of seven cases treated by this preparation are given, final conclusions being reserved for a fuller trial, but the authors think that krabao seeds furnish more active preparations than true chaulmoogra oil from Taraktogenos, confirming the opinion of L. Rogers with regard to the superiority of Hydnocarpus oils; the action is specific with general improvement in health and reduction or disappearance of nodules, the most rapid results following slight

febrile reactions. The work of TRAVERS on *H. anthelmintica* seeds orally in Malaya and of Government workers in Siam with the ethyl esters from the same is of interest in this connexion.]

L. R.

CALCAGNO (Oreste). Acidos grasos del aceite de bacalao y chaulmoogra en el tratamiento de la lepra y tuberculosis. Contribución a su estudio. [**Cod-Liver Oil and Chaulmoogra in Leprosy and Tuberculosis.**]—*Semana Médica.* 1925. Dec. 3. Vol. 32. No. 49. (1664). pp. 1435–1449. [24 refs.]

This is a difficult article to abstract. It is written in a diffuse style, point after point is brought up and dropped before decision is reached, and there is no summary or list of conclusions to direct the reader as to the aim of the author. It would appear that, being struck by the varying results from the use of the fatty acids of cod-liver oil and chaulmoogra, he decided to examine various preparations and estimate quantitatively the total and relative amounts of the active constituents in each. These, when separated, were tried *in vitro* on cultures of Koch's bacillus, and it was generally found that cod-liver oil had no effect on the growth of the organism, nor on its acid-fast properties. Esters and other derivatives were made, but these also yielded negative results. Since, however, in some patients excellent effects are obtained, it is stated that these are due to the vitamins present. As regards chaulmoogra oil the varying reports are due to the differing amounts of active constituents present in different plants. By mixing several a fairly uniform preparation was obtained, and the efficacy seemed to depend upon the mixture, which had a nearly fixed melting point at about 60° (and not below 42°) which was found to contain hydnocarpic acid 28–32 per cent., chaulmoogric acid 2·8–4·6 per cent.

There is a long list of conditions, chiefly pulmonary, in which benefit resulted from its use, but no figures are given.

The writer's supposition that these substances owe their therapeutic action to vitamins is incorrect, for Professor DRUMMOND tested this for me in the case of sodium morrhuate, and found it to be free from vitamins.—L.R.]

H. Harold Scott.

PALDROCK (A.). Der Leukozytensturz bei Leprosen. **Leucopenia in Lepers.**]—*Dermat. Woch.* 1925. July 4. Vol. 81. No. 27. pp. 998–1005. [9 refs.]

Intracutaneous injection of various substances produces in individuals with normal skin a reaction manifesting itself in leucopenia. In dermatitis the skin is unable to produce this reaction. Paldrock found that the application of CO_2-snow, which he uses in his method of treating leprosy, produces a violent reaction of this kind in people with healthy skin. In early cases of leprosy the skin is still capable of producing the reaction, but in a diminished degree. More advanced cases react with variations of the blood-picture. In long-standing cases there is a reaction in the opposite direction, viz., an increase in the number of leucocytes.

L. R.

PALDROCK (A.). Zur Chemie des Lepraerregers. II. Mitteilung. **The Chemistry of the Leprosy Germ.**—*Dermat. Woch.* 1925. Sept. 26. Vol. 81. No. 39. pp. 1431–1433.

The granules of leprosy germs contain lipoids and lipoproteids which can be rendered visible by stains of the fuchsin series, if the staining has been preceded by a 12-hours' preliminary treatment with 10 per cent. aqueous solution of saltpetre. Lipoids can be removed from the leprosy germs by allowing them to remain for 24 hours in ether. In that case the granules stain with fuchsin no longer brownish red, but red, with Victoria blue no longer dark blue but light blue, and with Gram's stain not black, but blue.

Smear preparations treated with nitric acid have also given up their lipoproteids, and they are therefore (with fuchsin and Victoria blue staining) only with difficulty rendered visible and appear gram-negative; erythrosin, however, gives an intense red colouration, a proof that the leprosy germs contain basic albumin in granules as well as in bacilli. Basic albumin gives gram-negative staining of the granular and bacillary leprosy germs. Granules of the leprosy germs containing lipoproteid stain blue, and, if they also contain lipoids, black; they are therefore gram-positive.

L. R.

PALDROCK (A.). Der Komplementverbrauch bei Kohlensäureschnee Behandlung der tuberösen Lepra. [**The Complement Consumption in the CO_2-Snow Treatment of Nodular Leprosy.**]—*Dermat. Woch.* 1925. Oct. 3. Vol. 81. No. 40. pp. 1456–1460.

In contradiction to ELIASBERG'S statements, Paldrock found not only that lepers have free complement in the blood, but that the amount of complement may even be greater than that of normal human serum. Treatment with CO_2-snow caused a consumption of complement, and lepromata on remote parts of the body that were not subjected to treatment disappeared, facts which the author claims as proof that antigens are set free and that the CO_2-snow treatment of leprosy is an active immunization.

L. R.

PALDROCK (A.). Die Senkungsreaktion bei Lepra. [**The Precipitation Reaction in Leprosy.**]—*Arch. f. Dermat. u. Syph.* 1925. Aug. 31. Vol. 149. No. 2. pp. 272–276.

In nodular leprosy there is extreme acceleration of precipitation of the erythrocytes. In anaesthetic leprosy acceleration is present, but considerably less. In long standing cases the acceleration of precipitation is greater than in fresh cases. The application of CO_2-snow also causes an acceleration of precipitation in healthy persons, and in lepers it increases still further the acceleration already produced by the leprosy. Four days after the CO_2-snow treatment there is a retardation of precipitation, which again accelerates 7–10 days after treatment. Paldrock explains the acceleration produced by the CO_2-snow as follows: The physical structure of proteins is changed by freezing. When lepromata are congealed by means of the CO_2-snow at —78°, an alteration in the equilibrium of the colloids is produced both in the tissue and in the leprosy germ and surrounding medium;

they undergo a displacement in the direction of coarse dispersion. These decomposition products of the cells and proteins produce after their resorption a change of stability in the plasma, which is manifested in an altered acceleration of precipitation.

L. R.

Heinemann (M.). Ueber die von Muchow und Levy angegebene Leprareaktion. [**The Leprosy Reaction described by Muchow and Levy.**]—*Dermat. Woch.* 1925. Oct. 3. Vol. 81. No. 40. pp. 1455–1456.

Muchow and Levy's serodiagnostic reaction was applied in 8 lepers and in 15 patients showing no signs of leprosy. All 8 lepers reacted positively, but 4 of the control cases also reacted positively.

L. R.

Breda (A.). La lepra è contagiosa.—*Giorn. Ital. di Dermat. e Sifilol.* 1925. Apr. Vol. 66. (Year 60.) No. 2. pp. 435-451. [11 refs.]

PELLAGRA.

WATSON (G. A.). **Pellagra.**—*The Eleventh Annual Report of the Board of Control for the Year 1924. Lunacy and Mental Deficiency.* pp. 122–128.

This report summarizes the enormous amount of work done upon pellagra cases occurring in the Lancashire County Mental Hospital, Rainhill, during the last 12 years. There is also contained an account of the author's original theory of the etiology of the disease, which will not here be discussed, as it was presented fully in the abstracter's last pellagra review (this *Bulletin*, 1925, p. 544) from a personal communication of the author himself.

The following observations are particularly worthy of note :—

1. The material consists of 54 cases, 15 males and 39 females. Of these 47 ended fatally, and autopsy with extensive microscopical examination was made in 33 of them.

2. Unlike outbreaks of the disease occurring in other places, it is noted that pellagra in British Mental Hospitals is of an extremely severe type, for most of these cases which ended fatally died as a result of the disease itself, and it is doubtful if any have completely recovered.

3. Several of the cases were admitted to the hospital already presenting signs of the disease, while others actually developed it while in hospital, the longest antecedent period of residence being 27 years.

4. WILSON's statement that nearly every case of pellagra can be cured by rest and improved diet does not apply to the Rainhill cases.

5. The author is emphatically of the opinion that in his cases food deficiency played no part in the etiology, because :—

(*a*) "If a defective hospital diet were the essential cause of pellagra, it seems strange that in so many of the old residents who have been attacked manifestations of the disease should have been so long delayed.

(*b*) "There was practically no restriction of the Rainhill Hospital dietary during the war period until March, 1917; yet 23 out of the total number of 54 cases observed up to the end of 1924 showed their first symptoms during the years 1913 to 1916, and others early in 1917 before restrictions came into force. During the years 1918 to 1921 inclusive (when the diet was still restricted), only two new cases were diagnosed, and no case at all in 1919 and 1920. Early in 1922 a much improved general hospital diet was instituted, especially as regards protein; but during that year a larger number of cases of pellagra occurred than in any previous year."

6. In these cases no differences were found between the intestinal flora of the pellagrins and of the general hospital population. A careful search was made for the *B. welchii*, but always without result. There was no connexion between helminthiasis and the disease. Though dysentery occurred in the hospital at the same time as pellagra, patients suffering from this disease were not found to be specially liable to that.

7. No connexion was evident between inanition and cachectic states on the one hand and pellagra on the other.

8. "There has been no evidence at Rainhill to justify a suggestion that the condition arises more frequently in wards containing patients who are faulty in habits, as has been stated by American observers."

9. The more important pathological findings may be summarized

thus. In the nervous system the most prominent and constant feature is the central neuritis of Adolf Meyer, this being present in all but two of the fatal cases (these were complicated by general paralysis). The granules of Reich were commonly found in the peripheral nerves but there was no evidence of neuritis and no special lesion in the sympathetic nervous system. Chronic nephritis was found slightly more often in these cases than in the general asylum population. The pancreas and parotid glands were not specially affected.

10. The author is convinced of the close association between pellagra and central neuritis, and he suggests that some form of endocrine imbalance may be one of the etiological factors concerned in the production of certain cases of both conditions. He concludes his report as follows :—

"It is assumed that in the cases of pellagra included in this series there is a congenital defect in the make up of certain nerve cells, especially those of the cerebral cortex, but not of these only. This defect lies chiefly, although not entirely in a certain region and at a certain level, viz., in the central region and at the level of the Betz and homologous cells and the larger pyramids. It would, perhaps, be difficult to imagine a greater contrast in pathological appearances than that presented by an uncomplicated case of pellagra with central neuritis and one say of general paralysis with dementia, not only as regards the difference in the amount of inflammatory reaction, but also in respect to the level of the cortical nerve cells involved in the two conditions."

A. D. Bigland.

Miller (R. S.). **The Problem of Pellagra.**—*American Med.* 1925. Apr. [5 refs.] [Author's Mimeographed copy, 5 pp. f'cap.]

This observer, Director of the Hospital for the Insane, El Khanka, Egypt, relates examples of pellagra outbreaks in which food deficiency could not have been the main factor. He points out that the agricultural labourer in Egypt, the fellah, has for his diet "an out-and-out carbohydrate monophagism." Many of the fellahin suffer from pellagra, but, again, a great many do not, and thus protein deficiency cannot be the sole cause of the disease.

A remark by Balfour in Byam and Archibald's Practice of Medicine in the Tropics, viz., "it is possible that a sameness in the diet may tend to exhaust the particular juices required for its digestion," gave the author an inspiration as to a possible cause of pellagra. The juices, which in the fellahin should be found to be lacking if this statement is true, would be ptyalin, amylopsin, maltase, lactase and invertase. The fact that the parotid glands are hypertrophied in some cases of pellagra suggests that an attempt is being made to increase the output of ptyalin, and that this is a compensatory hypertrophy to make up for a deficiency of carbohydrate-splitting ferments elsewhere in the body. The achlorhydria commonly noted in the disease will, by hindering the formation of secretin, diminish the flow of the pancreatic juice with its contained amylopsin. "Of the other juices, maltase, lactase and invertase, it is sufficient to say that considering the state of the small intestine in pellagra, no one would expect them to be present in the usual quantities."

The resulting deficiency in carbohydrate katabolism leads to (1) Little glycogen being stored in the liver, and (2) the intractable diarrhoea of the disease.

These observations lead the author to the belief that pellagra is "an enzyme deficiency disease disturbing the sugar metabolism of the body," and that the poor glycogen content of the liver, being reduced still further by cold and hard manual labour, accounts for the late winter and spring incidence of the disease.

A detailed and perhaps somewhat far fetched comparison is drawn between diabetes and pellagra. It is pointed out that the two outstanding dextrose-containing articles of diet in the world are alcohol (in the form of wines and beer) and fruit, and that both these articles are practically never consumed by the fellahin.

In conclusion, the suggestion is made that the decrease in the disease during the last twenty years in Northern Italy can be explained by the enormous increase in retail wine shops in that region. The author even goes so far as to suggest that the "dryness" of America is associated with the abundance of pellagra in that country.

A. D. B.

LEE (C. U.). **Pellagra in China: Some Recent Views on its Aetiology.**—*Nat. Med. Jl. China.* 1925. Apr. Vol. 11. No. 2. pp. 65–74. [15 refs.]

Up to the year 1923 pellagra was, apparently, unknown in China. In that year six cases were reported as occurring in Shanghai and one in Wuhu. Whether pellagra actually was not present before this must remain an open question, especially when one recalls the history of similar so-called initial outbreaks in other countries. The Chinese live upon a diet very deficient in protein and so, according to the author, the disease should be common if amino-acid deficiency is a cause. An account is given of the various schools of thought in pellagra etiology, and it is pointed out that even the adherents of the infection theory admit that diet plays an important rôle. In conclusion, it is suggested that possibly the universal use of soy beans among the Chinese accounts for the rarity of pellagra in that country.

A. D. B.

WILSON (R. M.). **Pellagra in Korea.** [Correspondence.]—*China Med. Jl.* 1925. July. Vol. 39. No. 7. pp. 661–662.

The writer is in charge of a large leper colony in Korea. In 1924 the inmates developed what, from the clinical description, was undoubtedly pellagra. During the summer of 1924 the condition became worse but disappeared in the winter. In the spring of 1925 it reappeared.

The Colony being run as a charity, great economy has to be practised. The diet is somewhat deficient, having rice and vegetables as its main component with a limited amount of protein, beans and barley. Meat is only bought about once a month. It is thought, therefore, that some food deficiency is the cause of the outbreak, but the writer has had seventeen years' experience of medical work in Korea and has never seen a case of pellagra before. He asks, "Is it possible that we have here an infection that has been brought into the country in some way?"

Practically all the cases responded to treatment with meat, pork being found particularly effective.

A. D. B.

Drummond (J.). **Pellagra in South Africa.**—*S. African Med. Rec.* 1925. Sept. 26. Vol. 23. No. 18. p. 413.

The author published in 1913 an account of a fatal case of pellagra in a South African native. Twelve years later another case, also fatal, occurred in his practice. The patient was a Sister belonging to a Roman Catholic Institution. No account of the diet or etiology is given except that an attack of dysentery preceded the onset of the disease. From the description the diagnosis is undoubtedly pellagra.

Having seen these two cases the author asks: "Are we missing cases or must we assume that the condition is rare in South Africa?"

A. D. B.

Hudson (L. B.). **Unrecognized Pellagra, a Serious Surgical Handicap.**—*New Orleans Med. & Surg. Jl.* 1925. Oct. Vol. 78. No. 4. pp. 242–246.

Three cases are described in which surgical operations were performed on pellagrins undiagnosed at the time. All were women and all ended fatally. The brief record of the cases is as follows:—

Case 1.—Operation—appendicitis, puncture of ovaries with fixation of the uterus. Eight days later vomiting, soreness of the tongue, nervous and mental symptoms followed. There was no skin lesion. Death occurred six weeks later.

Case 2.—Supra-vaginal hysterectomy with removal of left ovary tube and appendix. Eight days later exactly similar signs to those met with in the first case were noted. She lived about two months. There were no skin lesions throughout.

Case 3.—Hysterectomy and appendicectomy. Shortly afterwards the case presented symptoms exactly similar to the above; again there was no rash. This patient lived for four months.

The author regrets having operated upon these cases and warns other surgeons to be on their guard against such catastrophe. In the opinion of the reviewer, however, no blame attaches to the surgeon, as there was no evidence of pellagra before the operation, and even after, without any skin lesions, the diagnosis must remain sub judice.]

A. D. B.

Carrancá y Trujillo (Ramón). Pelagra y Vitaminas. El valor terapéutico del Maiz germinado. **Pellagra and Vitamins. The Therapeutic Value of Germinated Maize.**—*Rev. Méd. de Yucatan.* 1925. Apr. June & Aug. Vol. 13. Nos. 6, 7 & 8. pp. 148–153; 168–174; 196–198.

The first two sections of this article are taken up with a general review of pellagra and the theories of its causation, tending to show the influence of lipo-soluble vitamins, or rather the effect of a defective diet in which these are particularly wanting. For the past two years the author has employed maize which, by being kept in a moist atmosphere has been allowed to germinate; it is then washed and made into a paste to which cold water and sugar are added. 50 gm. of maize in this form is taken daily throughout the treatment. The results are said to be very favourable except in advanced cases when nervous symptoms have appeared.

H. Harold Scott.

Ornstein (L.). La cholestérinémie dans la pellagre. [**Cholesteraemia in Pellagra.**—*C. R. Soc. Biol.* 1925. Sept. 30. Vol. 93. No. 28. pp. 793–795.

Cholesteraemia has been studied in many conditions but not as yet, according to the author, in pellagra. This research seemed to be called for on the ground of the possible connexion between adrenal insufficiency and pellagra on the one hand and between cholesteraemia and the adrenal glands on the other. Thirty-five cases were studied, of which twenty-five were males and ten females. They represented all stages of the disease. The findings are as follows :—

Hyper-cholesteraemia	...	...	...	68·6 per cent.
Hypo- ,,	...	...	...	17·1 per cent.
Normal ,,	...	...	...	14·3 per cent.

These results are not in accordance with the hypothesis of adrenal insufficiency in pellagra. The author is of the opinion that the hypercholesteraemia can be explained by a disintegration of tissue in pellagra comparable to what obtains in old age and by the excess of lipoids found in certain organs by many observers.

A. D. B.

Goldberger (Joseph), Wheeler (G. A.) & Tanner (W. F.). **Yeast in the Treatment of Pellagra and Black Tongue. A Note on Dosage and Mode of Administration.**—*Public Health Rep.* 1925. May 8. Vol. 40. No. 19. pp. 927–928. [1 ref.]

This is a further report upon the beneficial effect of dried brewer's yeast in pellagra. A second series of cases has been treated by this remedy, and all, with one exception, made a prompt recovery.

In their original communication the authors recommended a dose of one gramme per kilo of body weight for those with active symptoms of the disease. Now the daily dose is fixed at 15 to 30 grammes of the dried yeast, or roughly two level teaspoonfuls, three to six times a day. The yeast is usually given in table syrup, less frequently in canned tomato juice and in milk. In addition to the above, dietary treatment should be carried out.

In dogs suffering from the affection known as black tongue yeast proved very effective in cutting short the attack. It must be given early in the disease.

The paper concluded with these words :—"It may be well to emphasize that in all but the severe cases of pellagra careful feeding is all that is needed. In our judgment, it is only in cases of more than average severity, or where such foods as fresh milk and fresh meat cannot be procured, that yeast may serve a valuable purpose and may help to save life."

A. D. B.

Owensby (N. M.). **"Yeast in the Treatment of Pellagra."** [Correspondence.]—*Jl. Amer. Med. Assoc.* 1925. July 18. Vol. 85. No. 3. pp. 212–214.

The writer of this letter apparently feels aggrieved that Goldberger's treatment of pellagra by yeast has been emphasized in the *Journal of the American Medical Association*, whereas his own work published previously dealing with the good effect of vitamin B extracts on this disease was overlooked.

The Editor in reply assures the writer that his Journal has no desire to fail in giving credit where it is due. He then proceeds to criticize the work of each. Of Owensby's work (*M.J. & Rec.*, Oct. 15, 1924) dealing with the treatment of pellagra with tomato juice, raw cabbage, lettuce, and the water in which vegetables have been cooked, the Editor remarks that it can scarcely be classed as a scientific report. On the other hand, GOLDBERGER and his colleagues of the U.S. Public Health Service have changed their ground so often in recent years that though scientific knowledge must increase and change year by year it behoves us not to lay too much stress at the moment on any particular pronouncement of these workers.

A. D. B.

NATIVE DIETARIES.

McCarrison (Robert). **The Relationship of Diet to the Physical Efficiency of Indian Races.**—*Practitioner.* 1925. Jan. Vol. 114. No. 1. (No. 679.) pp. 90–100.

In the opening paragraph the author, in remarking upon the great differences in physical efficiency of different Indian races, makes this statement:—"So great is the contrast betwen certain stalwart, vigorous and resolute peoples of the North and certain poorly-developed and toneless inhabitants of the South and East, that the question arises—why should there be these great differences between one race and another?"

The answer to this question resolves itself mainly into a discussion of the various diets in India. The vegetable kingdom supplies most of the food throughout the country, viz., rice, wheat, barley, maize, millet, legumes, vegetables and fruit. Milk, eggs and meat are rarely, if ever, used by the masses of the people. It is seen, therefore, that the staple food consists of "those parts of plants which have the function of storage tissues." "These are deficient in at least three dietary factors. All contain protein of relatively poor quality: all contain too little of certain mineral elements, especially calcium, sodium and chlorine, and all are deficient in fat-soluble vitamin A."

The physical efficiency of the various Indian races depends upon the extent to which this basal diet of the country is supplemented by food to make good its deficiencies. Such supplementary foods are meat, milk and its products, leafy vegetables and fruit. The more use is made of these the greater is the physical efficiency. The splendid physique of the Sikhs, the Pathans and the people of Hunza is an example of this contention.

Not only are these statements true as regards physique but also as regards disease and immunity thereto. This applies to infectious conditions as well as to the so-called food deficiency diseases.

In short, it may be stated that those races of India which carefully correct the deficiency of the basal diet show the finest physique and the greatest freedom from disease. The author concludes by hinting that what is true of India is true also of Europe.

A. D. B.

Halliday (H.). **Diet in the Tropics.**—*Practitioner.* 1925. Jan. Vol. 114. No. 1. (No. 679.) pp. 101–108.

The great majority of the 23 millions of people who inhabit the great plains of the Punjab and its Himalayan mountain tracts are engaged in agriculture and their food, speaking generally, is what the fields produce. Rice in the plains is only a luxury and even in the hill districts where it is a staple article of diet the only treatment it receives is "pounding." The chief constituents of the diet are whole meal bread and dâl. Meat, even when allowed by religion, is a luxury, but abundance of raw fruit is eaten all the year round.

Presumably as a result of this diet the natives are singularly free from disease. The author states "in an experience of 22 years' surgery in the Punjab I have found the following diseases very uncommon:—Appendicitis, gastric and duodenal ulcer, acute cholecystitis, gall stones

and their sequelae, and, finally, cancer in all its forms." The rarity of acute rheumatism, chorea and endocarditis is remarkable when it is remembered that among the Himalayan peasantry the women work for hours in the flooded rice fields in the steady downpour of the rains.

Arguments are produced to show that the rarity of cancer is not due to the people failing to come to hospital nor to the fact that they may not reach the cancer age, as has been suggested, but rather to the effect of correct diet.

A. D. B.

GAUDUCHEAU (A.) Sur la nourriture naturelle de l'homme d'après l'observation d'usages alimentaires exotiques primitifs. [**The Natural Diet of Man as shown by Primitive Food Habits in the Tropics.**]—*Bull. Soc. Path. Exot.* 1925. May 13. Vol. 18. No. 5. pp. 368–377. [1 ref.]

The statement is made that when the authorities in the Tropical French Colonies attempt to draw up rations for the native populace more or less grave troubles always follow due to deficiency of certain articles of diet. Examples are given in proof of this statement. The deficiency is sometimes quantitative in respect of calories, but the chief error is probably qualitative and concerns the accessory food factors.

The Chinese and the Annamites drink hot tea and eat hot rice. This is a tradition rigorously upheld and is not departed from even in the hottest of weather. The author is of the opinion that the cooking of the food may destroy some of the vitamins. This fortunately is counteracted by the custom of serving with the rice a large series of small dishes consisting of plants, animals, organs and viscera, etc. Even the poor observe this custom, though, of course, on a smaller scale.

As an example of how a native's natural diet can be more efficient than that arranged for him by a foreign authority the author gives the following interesting instance. When all therapeutic measures to combat the weakness and depression preceding and accompanying beriberi have failed the simple expedient of sending the native back to his own village and dietary has resulted in his returning completely cured in a month's time.

In order to improve the diet of the natives in French Tropical Colonies attempts are being made to encourage them in the cultivation of the land, the rearing of sheep and in the improvement of the fisheries. Though it is realized that the successful carrying out of such measures would necessitate a change in the character of the native race, nevertheless the author is of the opinion that this, up to a point, can be done, and done economically.

The ever interesting topic of the effect of diet upon race is discussed and the differing characteristics of the meat eaters and herbivores are contrasted. He instances the great improvement in the natives of Madagascar and Indo-China who after enlistment in the Navy and other Services are put on French military diet, viz., bread, meat, wine and fresh vegetables.

Having found that a mixture of fresh blood and yeast improves the health and vigour of animals he proposes to use this upon blacks "to complete their insufficient diets and to combat their apathy."

A. D. B.

Rosé (E.). Etude sur la fabrication et la composition chimique du nuoc-mam (extraits). **The Manufacture and Chemical Composition of Nuoc-mam.**—*Ann. de Méd. et de Pharm. Colon.* 1925. Jan.–Feb.–Mar.–Apr. Vol. 23. No. 1. pp. 5–20. [8 refs.]

In 1916 the Governor-General of Indo-China issued an order defining the composition of Nuoc-mam. This step became necessary owing to various frauds perpetrated with respect to this substance. Nuoc-mam is described as a condiment and as the national food of the Annamite. It is made by macerating fish in a concentrated solution of sea salt. It is essentially a salty solution of amino-acids. Its colour is yellow to yellowish-brown and it has a slight fishy odour.

The order relative to the sale and circulation of nuoc-mam completes its definition as follows :—

(1) Nuoc-mam should contain 15 to 25 grammes of total nitrogen per litre.

(2) It should contain from 60 to 77 per cent. of total nitrogen in the form of nitrogen titratable to formol.

(3) Not more than 50 per cent. of the nitrogen titratable to formol is to be capable of being transformed into ammoniacal nitrogen.

(4) It must contain from 200 to 140 grammes of salt per litre.

The author concludes with a detailed account of the manufacture, chemical composition and methods of analysis of nuoc-mam.

A. D. B.

Jansen (B. C. P.). **Researches after Nourishment, made in the Medical Laboratory at Weltevreden.**—*Meded. Dienst d. Volksgezondheid in Nederl.-Indië.* 1925. Pt. 2. pp. 132–135.

The author naïvely begins his remarks by stating that in feeding soldiers on organized rations good results are obtained because economy has not to be studied, while with prisoners bad results are obtained for the opposite reason. Research work was carried out in order that a dietary might be formulated which would keep the prisoners in good health and at the same time be reasonably cheap. For some years the diet had consisted of rice as its staple item, together with vegetables and fresh meat alternated, when possible, with fish. This was sufficient to keep the prisoners healthy, but it had its drawbacks, viz., the natives did not like the meat and the expense was considerable. Accordingly the meat ration was practically entirely replaced by Tempe Kedele*, a food much used by Javanese outside the prison. In order to guard against xerophthalmia, duck eggs and bananas were added occasionally. The percentage of protein in the new diet is lower than that in the old, though its biological value is the same or higher. The prisoners are contented and well and the saving in expenditure is great, which reminds one of the conventional ending to a fairy story.

A. D. B.

Blacklock (D. B.). **Appendix XII.—Report on the Investigation, by Means of Experiment on Fowls, of Constituents of the Freetown Prison Diet.**—*Sierra Leone Ann. Med. & San. Rep. for the Year 1923.* pp. 87–88. With 38 figs.

An account of experiments upon fowls fed upon the constituents of the Freetown Prison diet is given. The work is a continuation of that published in the report for 1922.

*Boiled soy beans fermented.—Ed.

"It was found that rice as supplied to the prison, whether old or new, if unpounded and cooked for short periods and if given with the water in which it had been cooked, did not produce signs of polyneuritis in fowls in the period of the experiment (three months). When the water in which the rice had been boiled was discarded there was evidence of definite effects on the fowls. This effect was increased when prolonged cooking was carried out. Even the brief pounding of the rice which was usually given at the prison for the purpose of cleaning the rice proved to have a greater individual effect than any of the other factors mentioned."

The effect of the age of the rice and of the presence of weevils were studied, but further experiments are necessary.

Ground Nuts.—On an exclusive diet of water and roast ground nuts fowls lost weight and died in too short a period for polyneuritis to show itself.

Split Peas.—Fowls fed exclusively on this constituent did not develop polyneuritis, nor did they die in the experimental period.

During the investigation it was noted that prisoners working as tailors were particularly prone to beriberi. Two possible factors were discussed in attempting to explain this curious phenomenon, viz., sunlight and exercise. As regards the former, experiments on fowls revealed no difference between those kept in the dark and those in sunlight. Exercise, however, was found to be particularly potent. Of fowls fed upon experimental diet and kept at rest all died in 17 days, while of those allowed free movement none died in less than 31 days. A second experiment was instituted in which more freedom of movement was given to all the birds. Of five fowls deprived of exercise none lived longer than 26 days, while a similar number fed in the same way and allowed free exercise survived 38 days or longer.

"The observations and experiments made here on the influence of lack of exercise in the disease beriberi are, so far as I am aware, new, and if confirmed will prove of considerable importance in dealing with beriberi."

A. D. B.

MAXWELL (J. Preston). **On Food Deficiency Disease simulating Pregnancy Toxaemia.** *Jl. Obstet. & Gynecol.* 4 pp. *Contributions from the Peking Union Medical College.* 1924. Apr. Vol. 3. No. 89. 4 pp. [3 refs.]

In May 1922 a Chinese woman aged 20 was admitted to the Peking Union Medical College Hospital. On examination she was found to be 33–34 weeks pregnant in addition to which she was oedematous and mentally confused. It was decided after careful consideration that the case was not one of pregnancy toxaemia nor of cardiac failure. A diagnosis of "Disturbance of the calcium metabolism and incipient beriberi" was made. This was based chiefly upon the facts that there had been much vomiting during the early period of pregnancy and that for the last 2–3 months the diet had been as follows: one meal a day of polished rice or whole wheat flour with a very small portion of vegetables and a little salted sesamum jam.

The patient was promptly placed upon a diet containing cod liver oil, one teaspoonful t.d.s.; milk-spinach soup (two tablespoonsful of pounded spinach to six ounces of milk) once a day; milk and eggs and "soft diet." As soon as the patient began to improve, which was in

a short time, full diet was given in addition to milk and milk-spinach soup. On June 19th 1922 twin girls were born and five months later both the mother and the babies were thriving.

A. D. B.

HARDEN (Arthur) & ZILVA (Sylvester Solomon). **Investigation of Barley, Malt and Beer for Vitamins B and C.**—*Biochem. Jl.* 1924. Vol. 18. No. 5. pp. 1129–1132.

The results of this investigation can best be given in the authors' own words :—

"1. The vitamin B of barley is not affected by the malting process and is frequently present in the finished malt, but is absent from the culms.

"2. The antiscorbutic vitamin appears in the steeped grain and is present in the green malt but absent from kilned malt.

"3. The beer examined by us was free from both vitamins B and C."

The beer referred to in this work is the variety known as India Pale Ale.

A. D. B.

PURDY (J. S.). **Vitamins and Fruit in Diet.** – *Jl. Roy. San. Inst.* 1925. Feb. Vol. 45. No. 9. pp. 393–408.

A fascinating but discursive address.

A. D. B.

PLAGUE.

Elton (C. S.). **Plague and the Regulation of Numbers in Wild Mammals.**—*Jl. of Hyg.* 1925. Oct. Vol. 24. No. 2. pp. 138–163. With 4 text figs. [62 refs.]

This long paper is a compilation which cannot be easily condensed. The references are numerous and useful; but as to the rodents and other animals mentioned there is little recorded that has not been noticed in previous volumes of this *Bulletin* [v. index (Wu Lien Teh, Haydon, Leger & Baury, etc.); v. also *Sanitation Supplement*, 1925, Mar. 30, pp. 18–20 (Wu Lien Teh); and *Sanitation Supplement*, 1925, Oct. 30, pp. 188–189 (Buchanan)].

J. H. Tull Walsh.

Gelonesi (G.). La seconda epidemia di peste verificatasi nella Regione dello Scidle (Somalia italiana). Osservazioni batteriologiche, cliniche e terapeutiche. [**Second Outbreak of Plague in the Italian Somaliland.**]—*Ann. di Med. Nav. e Colon.* 1925. Sept.–Oct. Year 31. Vol. 2. No. 3–4. pp. 159–178. [15 refs.]

The region to which this report refers suffered from plague in 1923–1924; see this *Bulletin*, Vol. 22, p. 373 (Andruzzi). The epidemic seemed to have subsided; but the disease reappeared later in 1924. The author of this report gives a full account of the second epidemic. As contrasted with a former report the use of anti-plague serum was not so successful in all cases. It is, however, worthy of notice that the statistics show 78 per cent. cures. Anti-plague serum gave very good results among patients previously protected by anti-plague vaccination.

J. H. T. W.

i. Grekoff. Ak-Kamishskaya Vspishka Chumi v 1924 G. [**The Plague Outbreak at Ak-Kamish in 1924.**]—*Guigiena & Epidemiologia.* Moscov. 1924. July–Aug. Year 3. No. 4. pp. 43–52.

ii. A.B. Chumnaja Vspishka v Turkestane v Amu-Darinski Oblasti. Januar-Jun. 1924 G. [**The Plague Outbreak in the Amu-Darya District of Turkestan, January-June, 1924.**]—*Vjestnik Microbiologii & Epidemiologii.* Saratov. 1924. Vol. 3. No. 3. pp. 198–201.

These two papers deal with a plague epidemic occurring in two adjacent villages situated not far from Petro-Alexandrovsk (now called Turt-Kulja), on the Amu-Darya river in Russian Turkestan. A total of about 125 cases with 110 deaths occurred, most of them being bubonic in type. As these sparsely populated regions are devoid of medical personnel the authorities only heard of the outbreak late in April. Only two-thirds of the patients were medically observed. Out of 83 cases 74 had uncomplicated buboes, six had secondary pneumonia, two showed primary lung symptoms. Of 16 patients treated in the hospital 31 per cent. recovered, whereas only 14 per cent. of the 67 others got well. One case with secondary pneumonia treated with glycerinated vaccine also escaped.

A serious and widespread epizootic had raged among the wild rodents in this district in autumn, 1923, so that towards the end of

the human outbreak practically no rodents could be found. There is reason to assume that the first human cases already occurred in autumn, 1923, having contracted infection while harvesting millet. After the epidemic was over, NIKANOROFF succeeded in proving plague infection in two wild rodents ("white sand mice"). Grekoff emphasizes the absence of any human outbreak for at least 50 years in this particular region of Turkestan. He is, however, unable to state definitely how the wild rodents became infected.*

Wu Lien Teh & R. P.

SUKNEFF (V. V.). Dva sluchai legochnoi chumi v Chitinskoi bakteriol. laboratorii. [**Two Cases of Pneumonic Plague in the Chita Laboratory.**] —*Guigiena & Epidemiologia.* Moscov. 1924. July–Aug. Year 3. No. 4. pp. 53–59.

This paper gives a detailed account of a laboratory outbreak occuring in the well-equipped Chita Antiplague Laboratory in December, 1923. The first victim, a lady doctor, although prohibited from touching living plague bacilli, disobeyed this order during the temporary absence of her chief. While preparing anti-plague vaccine she spilled some of the emulsion on her gown. This occurred on December 8th. She fell ill on the 13th; bloody sputum appeared on the 15th, and she died on the evening of the same day. Only a partial post-mortem could be performed; the faucial [?thoracic] organs were not seen (so that the primary character of the lung changes is not absolutely ascertained). Bacteriologically, the diagnosis was fully established. One of the contacts of the doctor—a laboratory assistant—who had been in close association with her early on the 15th, fell sick on the 18th December. He developed pneumonic symptoms, and died on the 20th.

Wu Lien Teh & R. P.

GIRARD (G.). Le dépistage "post-mortem" de la peste à Madagascar. Ponction pulmonaire et ponction hépatique. [**Detection of Plague in Madagascar after Death: Lung and Liver Puncture.**]—*Bull. Soc. Path. Exot.* 1925. Oct. 14. Vol. 18. No. 8. pp. 603–617. [5 refs.]

After much detailed description of methods and results the author concludes that for post-mortem detection of plague "puncture of the liver is a valuable method especially in bubonic and septicaemic plague. It may fail in certain forms of pneumonic plague only to be detected by puncture of the lung, which gives smears full of characteristic germs. This method can only be usefully employed in important centres where a bureau of hygiene with laboratory and specialists exists. The punctures must be made before the bacteria of putrefaction invade the body." In the discussion which followed the reading of this paper M. Marcel LEGER, after congratulating M. Girard on the work he had done, said: "Post-mortem diagnosis was extremely rare at Dakar [Senegal] when I was there. Co-ordination between the municipal medical officers and the Service of Hygiene led to early diagnosis of plague and transference of patients to hospital. Of

* Dr. WU LIEN TEH has kindly offered to furnish suitable summaries by himself and colleagues from Russian sources. We have here the first to be published.

those who died before a diagnosis was made I received many smears from the buboes and other organs. I believe that in the cases of pneumonic plague *B. pestis* was found in the liver as in the lungs."

J. H. T. W.

Le Cousse (E.). Recherches sur la peste au Cambodge en 1924, poursuivies au Laboratoire de Pnôm-Pênh. **Work on Plague at the Pnôm-Pênh Laboratory, Cambodia, in 1924.** *Bull. Soc. Path. Exot.* 1925. Oct. 14. Vol. 18. No. 8. pp. 630–632.

This is a paper on post-mortem detection of plague in the laboratory. In 1,065 examinations of organs sent to the author plague was verified in 103 cases. The author very wisely states that in early and doubtful cases he felt obliged to give a serious warning to the Service of Hygiene. For this reason he admits the figure—103—may be too high. His conclusions concerning plague among infants are worthy of record :—

"Plague among infants from birth to two years of age was only confirmed in nine cases, and for the greater part of these control cultures and inoculations did not give confirmative results."

"Plague among infants did not appear to be a frequent cause of mortality."

J. H. T. W.

Kirk (J. Balfour). **Note on a Case of Bubonic Plague displaying a Generalised Eruption.**—*Trans. Roy. Soc. Trop. Med. & Hyg.* 1925. Mar. 19 & May 21. Vol. 19. Nos. 1 & 2. pp. 84–86. With 1 chart in text & 2 figs. on 1 plate. [1 ref.]

The author of this Note is Medical Officer of Health, Port Louis, Mauritius. The facts briefly are as follows :—

On October 1st, 1924, a Hindu child was admitted to the Plague Lazaret, Port Louis, suffering from bubonic plague. There was a right inguinal bubo about the size of a pigeon's egg ; it was tender ; no sign of liquefaction, skin hot and dry and patient drowsy and very irritable when roused. On admission an attempt was made to inject anti-plague serum, but the girl was so restless that only 5·0 cc. could be given. 1·0 cc. of "Clinsearch" anti-plague vaccine was injected subcutaneously in the right upper arm on October 2nd. On October 6th a small bubo developed in the left axilla. On October 8th papules seen previously on the face became vesicular ; papules appeared on the neck. Papules appeared on the arms on October 10th, and on the buttocks and thighs on the 11th. Many of the vesicles became pustules. The skin between the various elements composing the rash was apparently healthy, except over the joints, where it was oedematous. There was no itching with the eruption. A temperature chart is given and the two photographs show the eruption on face and legs ; also oedema round the right knee joint. Dr. L. G. Barbeau, Director of the Bacteriological Laboratory, examined material from the pustules. The slides from agar slants showed gram-negative organisms, many exhibiting bi-polar staining with thionine blue. Subculturing on broth and sugar media yielded stalactite growths and biochemical reactions of *B. pestis* [*v.* this *Bulletin*, Vol. 22, p. 773]. (Teissier *et al.*) The child died on October 17th. No post-mortem and no animal experiments.

J. H. T. W.

Roberto Paso (Juan). Peste a forma ganglionar común grave con septicemia y carbunclos pestosos primarios y secundarios. [**Grave Bubonic Plague with Septicaemia and Carbuncles both Primary and Secondary.**]—*Semana Méd.* 1925. Aug. 6. Vol. 32. No. 32 (1647). pp. 277–287. With 9 text figs. & 1 chart.

The author describes, with much detail, a serious and fatal case of bubonic plague complicated by septicaemia and carbuncles on the chest and back. Admitted to hospital November, 1922, B.M., aged 26, died after four days. The temperature varied between 38° and 40° C. A full account is given of the bacteriological examinations : *B. pestis* was found together with staphylococci and streptococci. The findings at the autopsy are described, and the figures show various aspects of the carbuncles. A ground plan of Temperley, the district in which the man lived, is given, and the author states that in previous years two other fatal cases of bubonic plague had occurred ; but the source of infection was not clearly established.

J. H. T. W.

Roberto Paso (Juan). Meningitis pestosa. [**Plague Meningitis.**]—*Semana Médica.* 1925. Nov. 5. Vol. 32. No. 45 (1660). pp. 1139–1151. With 3 text figs. [15 refs.]

The author describes at great length and with much detail a case of plague with cerebrospinal meningitis. The patient, a male Spaniard, aged 39, when seen, showed inguinal buboes, submaxillary buboes and septicaemia ; later, signs of cerebrospinal meningitis appeared. The man died on the 15th day. The case was treated with injections of anti-plague serum—small doses : 80 to 120 cc. *B. pestis* was found in the buboes and by blood culture.

J. H. T. W.

d'Herelle (F.). Essai de traitement de la peste bubonique par le bactériophage. [**Treatment of Bubonic Plague by Bacteriophage.**] —*Presse Méd.* 1925. Oct. 21. Vol. 33. No. 84. pp. 1393–1394. With 4 text figs. [1 ref.]

Recently three cases of plague occurred on a steamer in the port of Alexandria. The patients were taken to the isolation hospital. A few days later a fourth case was sent in from another steamer. In each of the four cases injection of "bacteriophage," with puncture of the buboes, was the only treatment employed. The cases are described in detail. In all four cases cicatrization and absorption took place more or less rapidly after treatment. The "bacteriophage" used was prepared as follows : —10 cc. of culture of *B. pestis* in broth for 24 hours (pH—7·6 ; temperature 32° C.) were added to 3 cc. of fresh bouillon and inoculated with a previous culture bacteriophage of great bactericidal virulence. This bacteriophage was isolated in Indo-China from the stools of rats during a plague epidemic. After incubation for 24 hours at 37° C. the clear filtered liquid was used for the injections. Doses of 0·5 cc. and 1·0 c.c. of the bacteriophage fluid were injected into the buboes and the temperature charts show a steady fall of temperature after the injections. In two cases the buboes were also freely incised. The author states that in septicaemic and pneumonic plague intravenous injection might be tried. [*v.* this *Bulletin*, Vol. 21, p. 70 (Villazon and other references).]

J. H. T. W.

Jettmar (H. M.). **Remarks on the Coexistence of Tuberculosis and Plague. (Studied on Mixed Infection in Guinea Pigs.)**—*Nat. Med. Jl. China.* 1925. Aug. Vol. 11. No. 4. pp. 257–281. With 3 text figs. [15 refs.]

Clinical evidence does not support the view that pre-existent disease is any protection against plague infection. The writer puts the matter to the test in experimental animals by demonstrating the possibility of coexistence of tubercular and plague lesions in various situations and in various organs. There is no evidence, he finds, that the proximity of one organism exerts a detrimental effect on the other. Plague bacilli, however, do not migrate deeply into the tubercular granulation tissue of a tuberculous ulcer, nor are they to be found in caseous tubercular tissue. But there may be fusion of the necroses due to the plague and tubercle bacilli respectively. Tests carried out *in vitro* give similar findings to the *in vivo* experiments. Thus plague bacilli remain alive with undiminished virulence when inoculated into a tubercular surface growth on glycerin bouillon and again tubercle bacilli grow freely when sown in bouillon that has already served as culture medium for the plague bacillus.

W. F. Harvey.

Malone (R. H.), Avari (C. R.) & Naidu (B. P. B.). **The Bactericidal Power of the Blood of Rats as a Measure of their Immunity to Plague.**—*Indian Jl. Med. Res.* 1925. July. Vol. 13. No. 1. pp. 121–129. With 2 charts. [9 refs.]

Using the technique of Heist and Solis-Cohen (*Jl. Immunology*, 1918, Vol. 3, p. 233) a definite correlation has been shown to exist between the bactericidal power of the blood of rats and their immunity to plague. As a definite relation exists in rats it may be possible by this, or some other, technique to measure directly on man the protection likely to be afforded by various kinds of plague vaccines, the proper dosage to be employed, the duration of immunity and the effect of re-inoculation, as well as to throw some light on the mechanism of natural and acquired immunity to plague.

J. H. T. W.

Wayson (N. E.). **A Disease in Wild Rats with Gross Pathology resembling Plague.**—*Public Health Rep.* 1925. Sept. 18. Vol. 40. No. 38. pp. 1975–1979.

There has been observed among the wild rats of Oakland, California, and the neighbouring cities a disease the gross pathology of which resembles plague in rats. The specific factor is apparently one of the haemorrhagic septicaemia group, which produces rapid death in inoculated guineapigs, wild rats, and white rats, with resultant lesions resembling somewhat very acute plague. The practical importance of the disease is the difficulty it interposes in the routine diagnosis of plague in rats. The difficulty arises because of the similarity of plague lesions and those of this disease in the wild rat, and because the presence of the disease in a plague infected rat frequently results in the premature death of the inoculated test animal before the lesions of plague develop and before the plague organism has become widely disseminated through the tissues. The sanitary significance of these findings is as yet uncertain, since the pathogenicity of the haemorrhagic septicaemia group, other than *B. pestis*, with regard to man is unknown.

Dr. Karl F. Mayer and Mr. A. P. Batchelder are pursuing in more detail the study of the identification and classification of the organism involved.

J. H. T. W.

Lebedev (F. N.). *Citellus mugozaricus.* **I. Biological Observations.**
Nikanorov (S. M.). **II. The Rôle of** *Citellus* (*Spermophilus*) *mugozaricus* **as Carrier and Transmitter of Plague Infection to Man.**—*Rev. Microbiol. et Epidémiol.* 1925. Vol. 4. No. 3. English summary pp. 85–89. [In Russian pp. 25–34.] With 4 text figs.

Professor Nikanorov initiated the study of spermophiles on the left side of the Volga, the research being confined to the Volga German Republic. There were discovered 51·3 per cent. slanting burrows and 48·0 per cent. straight ones. The nests were at a depth of 97·0 cm. (see figs. 1–4). In May and June young spermophiles come out from the burrows to the surface of the ground. They feed on roots and grass; but in the laboratory they eat bread, potatoes, milk, etc. The study of spontaneous plague epizoötics among spermophiles (1912–1924) has shown that they are at the worst in May and June and on the wane as winter comes on. The form of disease is, in most cases, bubonic with lung and intestinal complications. Out of 198 infected animals under observation 193 perished, 5 recovered. Cultures of the plague bacillus are easily isolated from dead animals. Regular prophylactic anti-plague inoculation should be carried out in such areas.

J. H. T. W.

Maruyama (Y.). Ueber die Beziehungen zwischen den Veränderungen des Leukozytenbildes bei mit Pestbazillen geimpften Kaninchen und der Antikorperbildung. [**Relation between the Changes in the Leucocyte Picture in Rabbits inoculated with Plague Bacilli and the Formation of Antibodies.**]—*Taiwan Igakkai Zasshi* (*Jl. Med. Assoc. of Formosa*). 1925. June. No. 243. German summary p. 4. [In Japanese.]

This paper refers to the relation between leucocytosis and the formation of antibody in rabbits inoculated with plague bacilli. The author admits that it is difficult to produce a distinct leucocytosis by such inoculations unless they are large –more than 1 mgm. Between the experimental leucocytosis and the bacteriotropic substance and antibody there is no marked relation.

J. H. T. W.

Pons (R.). Action du bacille de Yersin sur les principaux hydrocarbones. [**Action of Plague Bacillus on the Chief Sugars.**]—*Ann. Inst. Pasteur.* 1925. Nov. Vol. 39. No. 11. pp. 884–887.

The author describes experiments made at Saigon on the reactions produced with various carbohydrates by the bacillus of plague and gives a table showing the action of 16 strains on five sugars at their isolation and after 6 and 12 months. He concludes that the plague bacillus never ferments lactose and saccharose, and always ferments maltose and glucose, and usually marmite, but without gas production; it is distinguished from other species of Pasteurella by the absence of fermentative action on saccharose.

J. H. T. W.

Schütze (Harry). **Plague Immunization in Guinea-Pigs and Rats.**—*Brit. Jl. Experim. Path.* 1925. Oct. Vol. 6. No. 5. pp. 207–210. [5 refs.]

In this paper the writer gives experiments which show differences in the immunizing power of various types of plague vaccine, when used on guineapigs. The same vaccines exhibited no difference of potency when used on rats. The three vaccines used were Haffkine's broth, heat-killed agar-grown, and a modification of Rowland's phenol-killed agar-serum vaccine as prepared at the Lister Institute. Of these, the last was the most efficacious. The writer comes to no conclusion on the reason for the difference found between guineapigs and rats in the matter of potency of the vaccines used, but suggests that it may have been "due to the infecting doses having been too weak for severe and differentiating tests or because rats respond to plague vaccines in a different manner from guineapigs"; he cannot say to which of these animals man would correspond. For guineapigs the immunizing doses were 1,500 million and 3,000 million at an interval of seven days and for rats half these amounts. The test doses in the case of the guineapigs were $\frac{1}{3}$ or $\frac{1}{4}$ cc. of a 2-day broth culture and in rats 1/100 cc. of a 3-day culture.

The method of preparation of the Lister Institute vaccine is: (1) Grow a body strain of *B. pestis* in bouillon 3 days at 28° C. (2) Mix: Bouillon culture, 1; horse serum (inactivated 30 min. at 56° C.), 9. (3) Sow nutrient agar in Roux bottles with this mixture of bouillon culture in heated serum. (4) Incubate face upwards at 28° C. for 3 days. (5) Reflood the agar surface daily by tilting the bottles backwards and forwards. (6) Wash off the growth after incubation with 0·75 per cent. phenol-salt solution. (7) Enumerate bacteria in the suspension obtained. (8) Leave at room temperature till sterile. (9) Dilute to the strength of 3 million per cc. with 0·5 per cent. phenol-salt solution.

In the experiments the vaccines used were all made from the same strain of *B. pestis*. A typical experiment with guineapigs, in which the order of use of vaccines was Lister, agar-grown heat-killed, and Haffkine, gave a protection for 16, 18 and 21 animals respectively of 44, 22 and 14 per cent. A similarly arranged experiment with rats gave a protection for 20, 20 and 19 animals respectively of 91, 90, and 86 per cent.

W. F. Harvey.

von Jettmar (H. M.). I. Einige Bemerkungen zur Epidemiologie und Histologie der Lungenpest. [**Epidemiology and Histology of Pneumonic Plague.**]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Nov. 6. Vol. 29. No. 11. pp. 650–665. [24 refs.]

This paper refers to pneumonic plague in Manchuria and neighbouring areas in China. Many of the most important papers referred to have already received notice in this *Bulletin*, see Index for Fujinami, Wu Lien Teh, Kulescha, Tsurumi, and others.

J. H. T. W.

Tsurumi (M.). **Investigation of Pneumonic Plague prevalent in Manchuria in 1920-21.**—*Jl. Roy. San. Inst.* 1925. Dec. Vol. 46. No. 7. pp. 291–298.

An interesting and well-written paper which, however, contains nothing new [*v.* this *Bulletin*, Vol. 22. pp. 775-776 (Wu Lien Teh & Pollitzer); Vol. 22, pp. 374–375 (various authors (Tsurumi, etc.), and references)].

J. H. T. W.

VAN STEENIS (P. B.). **The Way in which Plague spreads over Java.**—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1925. Vol. 65. No. 4. pp. 446–457. [5 refs.]

Polemical article against OTTEN (see this *Bulletin*, Vol. 21, p. 440), chiefly concerning the questions: (1) Whether "normal contact" exists between the house rat and the field rat in Java, in view of the part which the *Pygiopsylla ahala* (a parasite of the latter) might possibly play in the spread of plague; and (2) whether minor rice transport or, better, the field rat theory of VAN STEENIS could explain the extremely quick spread of plague round Parakan in 1919. The argument cannot be followed in detail.

W. J. Bais.

GRAHAM (J. D.). La peste dans l'Inde Britannique en 1924.—*Bull. Office Internat. d'Hyg. Publique.* 1925. July. Vol. 17. No. 7. pp. 753–755.

LLOYD (J.). Plague—Past, Present and Future.—*Jl. Amer. Med. Assoc.* 1925. Sept. 5. Vol. 85. No. 10. pp. 729–732. [5 refs.]

VAN LOGHEM (J. J.). Le rat domestique et la lutte contre la peste au XVIIe siècle.—*Rev. d'Hygiène.* 1925. June. Vol. 47. No. 7. pp. 521–527. [2 refs.]

MARTINELLI (Giuseppe). Contributo all' epidemiologia pestosa: epidemia di peste bubbonica nella Somali Italiana nell' anno 1924. Relazione sulla campagna antipestosa svolta nel territorio della R. residenza di Audegle (Somalia Italiana).—*Pathologica.* 1925. Apr. 1. Vol. 17. No. 393. pp. 185–187.

NAZARETH (F. X. de Sequeira). Epidemiological Notes on a Plague Outbreak at Margão and Surroundings in 1923–1924.—*Bol. Ger. Med. e Farmacia.* Bastora. 1924. Oct. 9th Ser. No. 10. pp. 409–429.

RENAUD (H. P. J.). Sur une épidémie de peste pulmonaire autochtone (pneumonie pesteuse primitive) au Maroc Occidental.—*Bull. Soc. Path. Exot.* 1924. Nov. 12. Vol. 17. No. 9. pp. 791–798. [10 refs.]

RODENHUIS (Y.). Pest.—Reprinted from *Handbuch der inneren medizin.* 2te Auf. Vol. 1. pp. 1263–1284. With 9 text figs. 1925. Berlin: Verlag von Julius Springer.

SEYFARTH (Carly). Ueber die Pest in Griechenland auf Grund einer Studienreise im Herbst 1924.—*Muench. Med. Woch.* 1925. Aug. 21. Vol. 72. No. 34. pp. 1428–1431. With 5 text figs. [9 refs.]

WILLOUGHBY (W. M.). Plague Measures in 1665 and Now.—*Jl. Roy. San. Inst.* 1925. Dec. Vol. 46. No. 7. pp. 280–284.

WU LIEN TEH. The Original Home of Plague.—*Japan Med. World.* Tokyo. 1924. Jan. 15. Vol. 4. No. 1. pp. 1–8. With 1 map in text.

CHOLERA.

Maitra (G. C.), Ganguli (Lal Behari) & Basu (J. B.). **Cellular Elements in Cholera Stools and their Relative Importance in Diagnosis of the Disease.**—*Indian Med. Gaz.* 1925. July. Vol. 60. No. 7. pp. 321–323. With 2 text figs. [2 refs.]

Cytological elements in the stool have furnished important clues in diagnosis. The toxins of the "comma" bacillus exert a specific action on the epithelial cells of the small intestine leading to necrosis and evacuation of the stools. A faithful picture of these changes is obtainable throughout the course of the disease and can be seen by staining a thin film of the stool made from a small bit of mucus. The cells are usually the altered epithelial cells of the small intestine with badly stained nuclei and very little protoplasm round them. Polynuclear cells are, as a rule, absent.

In 495 cholera cases diagnosed bacteriologically vibrios were found microscopically in 84 per cent. of the stool films. Of 496 cases 92 per cent. showed definite concentration of the blood. The cytological elements are constant and characteristic and a reliable index in 98 per cent. of cases.

J. H. Tull Walsh.

Ghosh-Dastidar (S. K.). **Treatment of Cholera and its Complications.**—*Jl. Trop. Med. & Hyg.* 1925. July 15. Vol. 28. No. 14. pp. 261–264.

There is nothing actually new in this paper ; but, since reminders and repetitions are necessary, it is worth reading. The author writes that the treatment of cholera depends chiefly upon the stage of the affection and then describes the various stages. The indications for treatment are :—(1) To replace the lost fluid in the system ; (2) To relieve the cramps ; (3) To lessen the activities of the absorbed toxins ; and (4) To lessen the number of vibrios in the intestine. The composition of saline injections is given : *Hypertonic*, *Isotonic* and *Hypotonic* which contains bicarbonate of soda and is used to counteract acidosis and uraemia. Kaolin and other drugs are mentioned as useful in the early stages or in mild cases. Directions for diet and hygienic measures are recorded and Haffkine's anti-cholera vaccine for use as prophylactic treatment.

J. H. T. W.

Ganguly (Lalbehary). **Izal in Cholera.**—*Indian Med. Gaz.* 1925. Oct. Vol. 60. No. 10. p. 467. [1 ref.]

Having given izal a fair trial as treatment in the cholera ward of the Campbell Hospital, Calcutta, the author concludes that :—

"In the treatment of cholera, izal cannot be put on a higher level than any other drug so far tried."

He believes that success in severe cases lies in judicious use of salines and alkalies.

J. H. T. W.

HARRIS (Norman MacL.). **The Preparation of Endo's Medium.**—*Milit. Surgeon.* 1925. Sept. Vol. 57. No. 3. pp. 280–285. [8 refs.]

When ENDO published, in 1904, the formula of the medium which bears his name, a great advance was made in the technique for the differentiation of the main members of the colon-typhoid group of bacteria. As the result of laboratory work on this medium and its possible modifications the author has found that the following formula gives the most consistent results :—

K_2HPO_4	3·5
" Difco " peptone	10·0
Agar (washed and dried)	15·0
Water (distilled)	1,000·0
Lactose, c.p.	10·0
To every 100 cc. of the above :—	
Sodium sulphite (anhydrous)	0·25
Basic fuchsin (pararosanilin and rosanilin), filtered 10 per cent. alcoholic solution	3·5 cc.

In conclusion he recommends the following factors : –

1. As a basis, Levine's formula, which does away with one of the root troubles, namely, meat extract.

2. A basic fuchsin containing both rosaniline and pararosaniline ; other fuchsins are productive of irregular results.

3. A hydrogen-ion concentration within the limits of pH 7·4 to 7·6.

4. Any peptone that will give with Levine's formula a vigorous growth ; "Difco", however, is highly recommended.

J. H. T. W.

NOBECHI (Keizo). **Contributions to the Knowledge of** *Vibrio cholerae.* **1. Fermentation of Carbohydrates and Polyatomic Alcohols by** *Vibrio cholerae.*—*Jl. of Bacteriol.* 1925. May. Vol. 10. No. 3. pp. 197–215. [27 refs.]

This long paper contains detailed laboratory work some of which has been previously published by the author [v. this *Bulletin*, Vol. 22, p. 386]. Some of the conclusions are : -The selective media for *V. cholerae* based upon the decomposition of sucrose and amylum, devised by BENDICK, ARONSON and KODAMA, have no capacity to discriminate the *V. cholerae* from the non-cholera spirilla. *V. cholerae* as well as most of the non-choleraic vibrio strains uniformly ferment the carbohydrates and polyatomic alcohols : glucose, laevulose, galactose, dextrin, amylum and mannitol. They entirely fail to ferment the following :—arabinose, xylose, inulin, dulcitol and iso-dulcitol (rhamnose) and salicin. Various strains decompose, in different degrees, lactose and glycerol.

J. H. T. W.

BENGSTON (Ida A.). **The Adaptability of Various American Peptones for Use in Cholera Media.**—*U.S. Public Health Service. Treasury Dept. Hyg. Laboratory—Bull. No. 139.* 1924. Nov. pp. 37–56. With 4 charts. [2 refs.]

The work here reported was undertaken for the purpose of ascertaining whether the various American peptones can be used as effectively as Witte's peptone, called for in GOLDBERGER's formulae for cholera media. Opportunity was also afforded to study, in terms of

pH ion concentration, the reaction most favourable for the development of *V. cholerae*. In conclusion it may be stated that the American peptones, in general, are suitable for the isolation of *V. cholerae*. Good growth was obtained in all media with the exception of Fairchild's peptone and sometimes Parke, Davis & Co.'s peptone solution, which were found to be too acid. By adjustment to a more alkaline reaction these could be made more favourable. The general statement may be made that owing to the variation among different peptones it is advisable to adjust to a more nearly uniform reaction in the case of those which vary to any considerable degree from Witte's in reaction. This paper is mainly concerned with the two enrichment media which Goldberger recommends be used conjointly, and the alkaline egg agar plating medium adapted from a similar medium described earlier (*Jl. Infect. Dis.* 1912. Vol. 10. p. 134) by Krumwiede, Pratt and Grund. The Goldberger-Dunham enrichment solution is :—

Potassium nitrate	1 gm.
Sodium carbonate (crystallized)	2 ,,
Sodium chloride	100 ,,
Peptone (Witte)	100 ,,
Distilled H_2O	1,000 cc.

The method of preparing the alkaline egg peptone and the alkaline egg agar for plating are described in detail. By adjusting the reaction of the Dunham solution in the alkaline egg enrichment medium and the agar in the alkaline egg plating medium to a point slightly on the alkaline side of neutrality, about pH 7·2–7·4, before the addition of the egg mixtures suitable media are obtained.

J. H. T. W.

Henrici (Arthur T.). **A Statistical Study of the Form and Growth of the Cholera Vibrio.**—*Jl. Infect. Dis.* 1925. July. Vol. 37. No. 1. pp. 75–81. With 16 figs. on 3 plates. [6 refs.]

It is well known that the cells of the cholera vibrio are subject to pronounced variation in form, and this organism has, therefore, been a favourite one for the study of pleomorphism. The literature dealing with this is extensive. Plate 1 shows various forms of *V. cholerae* seen by other workers. Plate 2 shows forms observed by the author. The forms observed were grown on plain agar. It is probable, therefore, that many of the apparent morphological changes of this organism reported in the literature are but variations in the rate of growth on different media or of different strains in the same medium. By the technic presented the variations may be followed quantitatively.

J. H. T. W.

Gloukhoff, Sokolowa & Goremykina. [Nouvelles recherches sur les anticorps de 73 personnes vaccinées au moyen de comprimés cholériques et de la poudre de cacao. **New Researches on the Antibodies in 73 Persons vaccinated with Cholera Cultures and Cacao Powder.**—*Hygiène et Epidémiologie.* Moscow. 1925. Jan.–Feb. Vol. 4. p. 63. [Summarized in *Bull. Inst. Pasteur.* 1925. June 30. Vol. 23. No. 12. p. 557.]

These investigations were undertaken to study the variations in the antibody following vaccination by ingestion of killed cholera culture to which powdered cacao was added. The authors state that the antibody formed after the first vaccine dose *per os* disappears after nine

months. A re-vaccination does not cause much change in the amount present in the serum. They conclude that vaccination *per os* results in a local immunity of the walls of the intestine, sufficient to prevent the penetration of vibrios into the body and to protect man from infection.

J. H. T. W.

Flu (P. C.). Ueber Cholerabakteriophagen. [**Cholerabacteriophage.**] —*Beihefte z. Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Vol. 29. No. 1. pp. 99–107. [6 refs.]

The idea developed in this paper is that strains resistant to bacteriophagy are, or may be, not only resistant, but also may, by their growth, especially in bouillon, bring about a steady diminution of potency of any bacteriophage which may be present: there would naturally be failure to carry on bacteriophage in subpassage, if the resistant strains got the upper hand and brought about the disappearance or inactivity of the bacteriophage.

This idea of the author may further be set out as a number of propositions :—

(1) A killed lysogenic strain in association with a young growing lyso-susceptible strain in bouillon culture often furnishes a potent bacteriophage.

(2) Lysogenic strains cultured in bouillon often develop resistant strains, with lengthening of the incubation time.

(3) Strains which are resistant to bacteriophage bring about, with their growth, disappearance of any bacteriophage present.

On the strength of these findings Flu considers he has probably explained the failure of d'Herelle to obtain subpassage of the cholera bacteriophage, and on the other hand, the success of Meissner in her experiments with peritoneal exudate of normal guineapigs. He suggests that d'Herelle's failure was due to too long incubation of bouillon cultures, by which resistant (bacteriophage-destroying) strains were developed and that the apparent recovery of bacteriophage by Meissner from the peritoneal cavity of guineapigs had nothing to do either with guineapigs or with the cholera-immune serum used, but was due to the presence of a specially lysogenic strain of cholera vibrio.

The technique employed by Flu was as follows :—

(1) Make a suspension of the surface growth of 4 slope-agar cultures of each of the test strains in 3 cc. bouillon. (2) Mix this suspension with desiccated anhydrous di-sod. sulphate to give a solid mass. (3) Grind up the mass finely in a mortar. (4) Make a suspension of the powder obtained in 100 cc. bouillon. (5) Heat 60 min. at 58° C., and add a portion to a sterile flask containing 100 cc. bouillon. (6) Sow the flask with a test strain of *V. cholerae*. (7) Incubate 14 days. (8) Remove a small quantity of fluid from the incubated flask and heat for 60 min. at 58° C. (9) Test 0·1 cc. of this heated fluid for bacteriophagy against suspensions of young 18-hr. vibrios.

Ten strains were examined, numbered 21, 22, 23, 24, 100, 101, 102, 103, 104 and 105 respectively. The results were that potent bacteriophage was obtained in those cases in which the conjunction of strain No. 101 and a test strain occurred. Not all the test strains, however, were susceptible of lysis. For example, test strain No. 22, after being rubbed up with di-sod. sulphate and killed, only gave any bacteriophage when grown along with No. 101 strain, and even then against strains 21, 22, 23 and 100 only. Again, killed strain No. 101 gave bacteriophage when grown with each of the same series of test strains as No. 22, and for a considerable number of the tested strains, but not when tested against itself. This No. 101 strain was not only resistant to lysis, but was also capable of inhibiting or weakening the bacteriophage, if developed or present, and of bringing about its early disappearance on subpassage.

W. F. Harvey.

Tsunetsugu (Hiroshiro). **On the Influence of the Bile and Mucous for the Proliferation of Cholera Vibrios.** — *Tokyo Iji-Shinshi* (*Tokyo Med. News*). 1925. Apr. No. 2416. [Summarized in *Japan Med. World.* 1925. June 15. Vol. 5. No. 6. p. 157.]

The vibrios of cholera proliferate luxuriantly in a medium containing human, rabbit's or cattle bile, although less so than in peptone water. These three kinds of bile have the same value. The same efficacy was seen in heated and non-heated bile. A medium containing 1 per cent. of mucus was inferior to peptone water; but if it contained 3 per cent. mucus it was superior even to peptone water.

J. H. T. W.

Kabeshima (Tamezo). **Studies on the Shanghai Strain of** *Vibrio Cholerae* **of 1925.**]—*Tokyo Iji-Shinshi* (*Tokyo Med. News*). 1925. Sept. No. 2439. [Summarized in *Japan Med. World.* 1925. Nov. 15. Vol. 5. No. 11. pp. 320–321.]

The author carried out immunological tests with the strains isolated from the cases in Nagasaki, Yokohama and Tokyo, in which places an epidemic broke out in 1925. He concluded that they all belonged to one strain of very strong virulence.

J. H. T. W.

Cantacuzène (J.). Formation d'une race agglutino-résistante de vibrions au contact des tissus d'un organisme immunisé contre ces vibrions.—*C. R. Soc. Biol.* 1925. May 29. Vol. 92. No. 18. pp. 1461–1464.

Cho Syu Cho. On Vibrios in Water.—*Taiwan Igakkai Zasshi* (*Jl. Med. Assoc. of Formosa*). 1925. Apr. No. 241. English summary p. 4. [In Japanese.]

Fry (A. B.). Cholera in Bengal: Past and Present.—*Indian Med. Gaz.* 1925. July. Vol. 60. No. 7. pp. 301–307. With 3 maps and 2 charts in text.

Iimura. Aperçu historique sur les épidémies de choléra au Japon.—*Bull. Office Internat. d'Hyg. Publique.* 1925. July. Vol. 17. No. 7. pp. 740–749.

Golovanoff. Contribution à l'étude de la protection anticholérique par des agents non spécifiques.—*C. R. Soc. Biol.* 1925. June 5. Vol. 921. No. 19. pp. 1489–1490. [3 refs.]

Graham (J. D.). Le choléra dans l'Inde Britannique en 1924.—*Bull. Office Internat. d'Hyg. Publique.* 1925. July. Vol. 17. No. 7. pp. 750–752.

van Loghem (J. J.). Exohämolysine und Endohämolysine bei Vibrio Tor und *Vibrio cholerae*.—*Beihefte z. Arch. f. Schiffs- u. Trop.- Hyg.* 1925. Vol. 29. No. 1. pp. 207–210. [5 refs.]

Maitra (G. C.) & Basu (J. B.). Cultivation of Cholera Vibrio from Faeces.—*Calcutta Med. Jl.* 1924. Nov. Vol. 19. No. 5. pp. 179–180. [2 refs.] [*v.* this *Bulletin*, Vol. 21, p. 887 (Maitra & Basu).]

Russell (A. J. H.). Periodicity of Cholera in India. [Correspondence.]—*Lancet.* 1925. Aug. 15. pp. 356–357.

——. A Statistical Approach to the Epidemiology of Cholera in Madras Presidency.—*Proc. Nat. Acad. Sci.* Wash. 1925. Oct. Vol 11. No. 10. pp. 653–657. With 6 figs.

Sdrodowski (P.) & Brenn (E.). Zur Pathogenese der Cholera.—*Cent. f. Bakt.* I. Abt. Orig. 1925. Feb. 18. Vol. 94. No. 3-4. pp. 155–160.

ENTERIC FEVERS IN THE TROPICS.

Brás de Sá (L. J.). Estudos sobre as febres remitentes de Goa. **The Remittent Fevers of Goa.** -*Bol. Ger. Med. e Farmacia.* 1925. Jan. 10th Ser. No. 1. pp. 4–21.

This paper is designed to show the value of what may be called the residual agglutinin test for diagnosing the character of a past febrile attack. The author estimates the agglutinating titre to *B. typhosus*, *B. paratyphosus* A, and *B. paratyphosus* B, of the sera of uninoculated patients who have at various intervals previously passed through an attack of fever, and if the results are positive with as high a dilution as 1:50 he regards this as diagnostic of one of the group, and if the reaction is higher for one than for the rest as diagnostic of infection by that bacillus. For example, a patient had an attack of fever of 15 days' duration two years previously. His serum gave the following :—

Dilution.	*B. typhosus.*	*B. paratyphosus* A.	*B. paratyphosus* B.
1 : 10 ...	+	+	+
1 : 50 ...	±	±	±
1 : 100 ...	±	±	—
1 : 200 ...	—	—	—

He concludes that the disease was probably true typhoid fever. [This opens up the question how far agglutinins represent immunity reactions, while the reverse finding :—that failure to agglutinate disproves infection by a member of the enteric group, which appears also to be claimed in this paper, is certainly not the case, since the Widal reaction may be negative within a few months after a severe attack of enteric fever.]

H. Harold Scott.

Minett (E. P.). **Enteric Fever in Chinese Infants.** -*Trans. Roy. Soc. Trop. Med. & Hyg.* 1924. Nov. 20 & Dec. 11. Vol. 18. Nos. 5 & 6. pp. 276–277.

As the result of observation and inquiry the author believes "that enteric fever is much more common amongst Chinese infants than is usually supposed, especially during the local epidemics that occur occasionally, usually shortly after the beginning of the rainy season. The Chinese do not drink unboiled water, but, as the native portion of the town (Hong Kong) is supplied with the bucket system of sewage disposal, and flies are abundant, the possibility of food contamination cannot be neglected."

J. H. Tull Walsh.

Lichtenstein (A.). Foudroyant verloopende Febris typhoidea. [**Peracute Typhoid Fever.** -*Geneesk. Tijdschr. v. Nederl.-Indië.* 1925. Vol. 65. No. 3. pp. 381–395. With 2 charts in text.

Peracute cases of typhoid fever are rare. They are mentioned in French text books and Rogers quotes two fatal cases of less than 15 days' duration. Lichtenstein describes three cases, ending fatally respectively after 2, 6, and 5 days. In all the diagnosis was established

by bacteriological examination post mortem, once after 20 hours (in the third case during life a blood culture in bile had been negative twice); there existed some follicular swelling with a few ulcers of the lower ileum and swelling of the mesenteric glands.

At the post-mortem of another acutely fatal case, showing the anatomopathological characteristics of typhoid fever (typical ulcers) it was found impossible to isolate the bacillus typhosus.

The knowledge of the existence of such cases of typhoid fever is important for the practitioner in the tropics.

W. J. Bais.

Oostingh (R.). Eenige mededeelingen over de typhuspatiënten van de Centrale Burgerlijke Ziekeninrichting te Weltevreden gedurende 1924. **The Typhoid Patients at the Central Civil Hospital at Weltevreden during 1924.** — *Geneesk. Tijdschr. v. Nederl.-Indië.* 1925. Vol. 65. No. 4. pp. 525–528.

Among 151 patients the mortality was 21·2 per cent. The highest mortality occurs during the first few days following admission, indicating that hospital attendance is only sought by the natives in comparatively late stages of the disease. Of those attended to longer than three days the mortality was 18 per cent; of those longer than seven days 11·8 per cent. In about 60 per cent. of the cases the fever lasted less than 30 days. Constipation was found in nearly 70 per cent., intestinal haemorrhage in 10·6 per cent. (three ending fatally), perforation in two cases, both fatal.

Further figures contained in the report are not of general interest.

W. J. Bais.

Lacy (G. R.) & Garcia (O.). **Results of Blood Cultures during the Recent Typhoid Investigation in Manila.** — *Jl. Philippine Islands Med. Assoc.* 1925. Mar. Vol. 5. No. 3. pp. 83–85.

The authors give full details of the number of persons examined and the methods employed in the investigation. They obtained positive blood cultures from 30·7 per cent. of all cases examined, or from 40·2 per cent. of those proven to be typhoid or paratyphoid. These results were obtained from patients who had been sick for an average of thirteen and one-tenth days. Bile media proved to be more satisfactory than dextrose broth; they gave earlier positive results. Nineteen paratyphoid "A" cultures were found among 120 positive cultures.

J. H. T. W.

Boletim Geral de Medicina e Farmacia. 1924. Dec. 9th Ser. No. 12. pp. 492–512.—Sôbre a endemia da febre tifoide na India Portuguesa. [**Typhoid in Portuguese India.**]

A general inquiry into the prevalence of epidemics of enteric fever in Portuguese India, their causes and prevention. Contains nothing new.

J. H. T. W.

Lalung-Bonnaire (P.) & Pons (R.). Les fièvres typhoïdes en Cochinchine.—*Arch. Insts. Pasteur d'Indochine.* 1925. Oct. No. 2. pp. 121–152. With 6 charts & 1 text fig. [64 refs.]

RABIES: A REVIEW OF RECENT ARTICLES. IV.*

During the last six months interest has centred chiefly upon the treatment of rabies by the ether method of ALIVISATOS. Results have appeared from various sources from which it appears that one may no longer rest content with a method of treatment which permits of failures in even a moderate degree.

We may be permitted, in the first place, to enquire into the origins of the method. At an early date in the history of anti rabic treatment, ROUX suspended brains containing fixed virus in a mixture of ether and water, and found that the brain substance retained its immunizing properties. He even commenced to treat patients by the use of this substance. This work was unpublished, but was passed on by word of mouth to REMLINGER, who refers to it in his first article on the use of ether (*Ann. Past. Inst.*, 1919. Vol. 23. p. 616).

Unaware of ROUX'S experiments, REMLINGER, guided by the work of VINCENT on the attenuation of typhoid virus by ether, had investigated the properties of fixed virus brain substance which had been immersed in sulphuric ether. He found that the brain substance so treated for various periods of time and thereafter emulsified in normal saline, preserved its virulence after 60 hours immersion, but the superficial parts of the brain had become innocuous. After 120 hours immersion the whole brain had become avirulent. Of 37 rabbits, each of which had received from 1 to 7 gm. of original brain substance, eight were immunized.

In the meantime ALIVISATOS had been following a somewhat similar line of investigation in the antirabic institute at Nisch (Servia). He found similarly that 24–36 hours immersion in ether had little effect on virulence, that it was reduced by 48–96 hours immersion, and completely destroyed after 120–140 hours.

Large doses of this latter material were found to be innocuous, as also were large doses of street virus brains which had been similarly treated. Animal experiments gave indications of good immunizing properties, and so the method was applied to the treatment of man. Doses amounting to 4 gm. of original brain substance (F.V.) which had been extracted by ether for 72–108 hours, and thereafter emulsified in normal saline in the proportions 1 in 20, were employed. His results were as follows :—

	Persons treated.	Of whom there were severely bitten.	Deaths.	
			Less than 15 days after inoculation.	More than 15 days.
1. Högyes' method intensified ...	424	89	7	1
2. Högyes' method plus ether method. The latter at end of treatment, dose up to 4 gm. (72–108 hours in ether) ...	621	198	4	—
3. As in 2—but 8–10 gm. of brain substance (etherized 84–72 hours) given as early as possible	989	315	—	—

* For the third of this series see Vol. 22, pp. 699–706.

He has never observed any paralytic accidents or other ill effects.

Alivisatos' method of preparation and treatment may be described in detail.

The fixed virus brain is freed from its membranes, weighed and immersed in sulphuric ether under sterile conditions. In this it remains for from 72–84 hours. It is then chopped up on a sterile plate, and left for an hour under a bell jar, to allow the ether to evaporate. It is then pounded in a mortar, and made up to 1 in 20 in normal saline. Inoculations of 1 to 1·5 gm. cause no inconvenience to the patient. The following is an example of the method of treatment. The case was that of a person bitten on the lip, who arrived 6 days late.

1st day	...	1·5 gm., etherized	84 hours.
2nd day	...	1·5 ,, ,,	84 ,,
5th day	...	1·5 ,, ,,	72 ,,
7th day	...	1· ,, ,,	72 ,,
9th day	...	1· ,, ,,	72 ,,
12th day	...	1· ,, ,,	72 ,,
14th day	...	0·5 ,, ,,	72 ,,
15th day	...	0·5 ,, ,,	72 ,,

In his paper (*Deut. Med. Woch.*, 1922, Vol. 48, p. 295), Alivisatos claims that cases of short incubation can be overtaken if large doses are given early in the treatment, and if they are of sufficient size.

It would appear then that the deleterious substance which leads to paralytic accidents, and thus precludes the exhibition of large doses of vaccine by the usual methods is ether-soluble, and can be removed by a very simple technical process. In previous reviews we have dealt in detail with the direct relation between risk of paralytic accident and quantity of nerve substance inoculated. In a current article Hempt states that the chances of such occurrences are as follows: With Högyes' method, 1 in 60,000, with the classic Pasteurian method 1 in 5,000, with intensive Pasteurian 1 in 2,000, with the "Roman method" 1 in 800, with the "German method" 1 in 400, and with superintensive methods even 1 in 30. We recall Schweinburg's experiments which showed that large quantities of normal brain substances also produced accidents. It would appear then that this primary difficulty has been removed, and that after removal of the deleterious substance—whatever be its nature—by etherization, we may use as large doses as we please. It is significant that the necessity for such a modification has arisen in places where bites are severe, and face bites are in undue proportion.

Let us now turn to a scrutiny of such statistics as have been collected.

Tables II. and III. showing the figures for the Vienna Institute are given by Schweinburg[1].

During the period 1919–21 various modifications of the dried cord method were employed. The treatment was lengthened up to 4 weeks. In certain cases the whole treatment was repeated after the lapse of a month. Doses were increased; stronger (less dried) cords were used. It will be remembered (this *Bulletin*, Vol. 22, p. 699) that no less than 39 paralytic accidents occurred at this Institute during a period of nine years.

During the last period, 1922–23, the method of Alivisatos was combined with those of Pasteur and Högyes in all severe cases, but

[1] Schweinburg (Fritz). Bericht ueber die Tatigkeit der staatlichen Schutzimpfungsanstalt gegen Wut in Wien in den Jahren 1913 1923. (Vorstand Dozent Dr. Busson.)—*Seuchenbekämpfung*. Vienna. 1925. Vol. 2. No. 5. pp. 223–234.

Tables II. and III.

	Pre-war, 1913–14.					War, 1915–18.				
		Deaths.		Failures.			Deaths.		Failures.	
	Treated.	No.	Per cent.	No.	Per cent.	Treated.	No.	Per. cent.	No.	Per cent.
Head ...	88	8	9·09	3	3·41	309	23	7·45	16	5·18
Hand ...	669	6	0·89	5	0·75	2,224	22	0·99	17	0·76
Upper Extremity	185	1	0·54	1	0·54	675	9	1·33	9	1·33
Lower Extremity	379	1	0·26	1	0·26	1,484	7	0·47	6	0·40
Trunk ...	47	—	—	—	—	158	—	—	—	—
	1,368	16	1·78	10	0·73	4,850	61	1·26	48	0·99

	Post-war, 1919–21.					1922–23.				
		Deaths.		Failures.			Deaths.		Failures.	
	Treated.	No.	Per cent.	No.	Per cent.	Treated.	No.	Per cent.	No.	Per cent.
Head ...	77	9	11·69	2	2·59	94	1	1·06	1	1·06
Hand ...	589	4	0·68	4	0·68	783	1	0·13	1	0·13
Upper Extremity	117	—	—	—	—	162	—	—	—	—
Lower Extremity	305	1	0·32	1	0·32	502	1	0·20	1	0·20
Trunk ...	29	—	—	—	—	22	—	—	—	—
	1,119	14	1·25	7	0·62	1,563	3	0·19	3	0·19

it is to be noted that of the three fatal cases included in the statistics one received no ether vaccine, and a second only half the quantity which was given latterly. The Pasteur method was finally abandoned in September, 1923, and since then no paralytic accidents have occurred.

For the results of treatment at the Vienna Institute during 1924 we turn to Busson[2], who states that among 672 treated, of which 42 were bitten on the head and more than double that number on the arm, no deaths have occurred.

Further results of treatment by ether virus come from Hempt[3] from the institute at Novisad (Yugoslavia). Amongst 6,000 persons bitten during a period of three years, there have occurred 2 deaths, and no failures. Hempt uses Alivisatos' method and employs doses amounting to 2 gm. for slight cases, to 3 gm. for severe, and to 4 gm. for exceptionally severe bites.

Hempt's method, as described by Joannovitch[4], differs somewhat in detail from that of Alivisatos and Remlinger. The vaccine is

[2] Busson (B.). Zur Frage der Lyssa-Schutzimpfung durch die praktischen Aerzte und der prophylaktischen Impfung der Hunde.—*Wien. Klin. Woch.* 1925. July 9. Vol. 38. No. 28. pp. 789–792.

[3] Hempt (Adolphe). Sur une méthode rapide de traitement antirabique.—*Ann. Inst. Pasteur.* 1925. July. Vol. 39. No. 7. pp. 632–640. [1 ref.]

[4] Joannovitch (G.). L'emploi du vaccin atténué par l'éther pour le traitement antirabique de l'homme.—*Bull. Office Internat. d'Hyg. Publique.* 1925. June. Vol. 17. No. 6. pp. 618–622.

prepared in two strengths, and daily doses are given. Antibodies are said to appear in the blood between the 14th and the 18th day. At the date when this paper was written, HEMPT's figures were 6,653 persons treated, and 4 died of rabies, all before 15 days after the completion of treatment.

(2) *Other methods of immunization.*—In his report on the Pasteur Institute at Paris, VIALA[5] describes in detail the method which is there employed. The method is that of CALMETTE, and may be quoted at length.

In each of a number of 50 cc. pots are placed 25 cc. of neutral glycerine of specific gravity 1·262 (30° Bé), and sterilized at 120° C. for 20 minutes. After cooling, fragments of cord, previously dried in the ordinary manner over potash sticks, are immersed in the glycerine. The fragments placed in any vessel must not have collectively a greater length than 5 cm. These vessels are placed in an ice box at 4° C.

Cords are extracted from the rabbit by Oshida's method, and moribund animals are placed on ice to prevent agonal contamination. Cords must not be kept in glycerine for more than 20 days. The scale of treatment is as follows:—

Slight cases receive a 15 days' treatment of 3 cc. daily of cords which have been dried for the following periods, 5, 5, 4, 4, 3, 3, 4, 3, 2, 4, 3, 2, 3, 3 2. Multiple bites receive a further three days' treatment of cords dried 4, 3, 2 days. Severe bites a still further group of 3 doses, viz., 3, 3, 2, and head bites four days more, 3, 3, 2, 2. Thus, a head case remains under treatment for 25 days.

In Paris during the year 1924, 764 persons were treated: of these, 2 died, one of which was a "failure."

HERRMANN[6] has carried out further experiments with his "Vaccine 58/60" (a 1 per cent. emulsion of fresh nervous material heated for 30 minutes at 58–60° C., to which ½ per cent. carbolic has been added). After 20 days' treatment experimental animals withstood two intracerebral inoculations with S.V. He has treated 683 persons with this vaccine, and has had no deaths from rabies, or paralytic accidents.

NIKOLAJEWA,[7] writing from Ufa (Russia), has, during the years 1918–19, used mixtures of carbolized vaccine (FERMI) and serum. From a series of experiments on 12 animals he concludes that vaccination by carbolized vaccines is as good as by dried cord, and two and a-half times as good as by the dilution method of Högyes. Using UMENO and DOI's method of treatment, SCHOENING[8] carried out a series of immunization experiments on dogs. He found that when tested with two different strains of street virus, protection was good (12 of 16 survived); but when tested with a third strain only 6 out of 30 dogs lived. All these strains of street virus were freshly prepared, and the fixed virus of which a single immunizing dose was given had its origin in Paris. He concludes that there must be more than one

5 VIALA (Jules). Les vaccinations antirabiques à l'Institut Pasteur en 1924.—*Ann. Inst. Pasteur.* 1925. June. Vol. 39. No. 6. pp.559–563.

6 HERRMANN (Otto). Inaktivierte konservierte antirabische Vakzine "58–60." Vorläufige Mitteilung.—*Cent. f. Bakt.* 1. Abt. Orig. 1925. Sept. 15. Vol. 96. No. 2. pp. 131–136. [1 ref.]

7 NIKOLAJEWA (E.). Antiwutimpfung mittels Karbolvakzine nach der Methode von Prof. Fermi.—*Cent. f. Bakt.* 1. Abt. Orig. 1925. Aug. 1. Vol. 95. No. 7-8. pp. 423–428. [11 refs.]

8 SCHOENING (Harry W.). Studies on the Single-Injection Method of Vaccination as a Prophylactic against Rabies in Dogs.—*Jl. Agric. Res.* Washington. 1925. Mar. 1. Vol. 30. No. 5. pp. 431–439. [3 refs.]

strain of street virus in America, and that this must be taken into account in the single dose vaccination of dogs.

In an unsigned article in *La Grèce Médicale*[9], two cases of double facial paralysis following antirabic treatment are reported.

(3) *Chemotherapy.*—Following on the work of Friedberger and Sach (1908), who claimed that the incubation period of rabies was prolonged by the administration of atoxyl and thioglycocholic acid, and of Moon (1913), who stated that quinine had a definite influence, Harkins[10] examined the effects of various substances. He found that when fixed virus was suspended in 1 in 200 sulpharsphenamin or in 1 in 1,000 flumerin, no germicidal action was exerted within 30 minutes at 38° C. The material was tested by intravenous injection into the rabbit. The incubation period was not prolonged. No preventive or curative effects were obtained from injections of Gentian violet, neoarsphenamin, sulpharsphenamin, potassium bismuth tartrate, ethyl-hydro-cuprein hydrochloride, quinine and urea chloride or mercurochrome (220 soluble). The experiments were carried out on from 2 to 4 animals for each preparation, with three controls for the entire series.

(4) *Statistics.* Rochaix[11] reports that 718 persons were treated at the Lyons Institute during 1923 with no deaths, and from the Pasteur Institute of Southern India Cornwall[12] reports a death rate of 1·43, and a failure rate of 1·22 amongst 489 persons treated. Treatment is distributed to local centres from this Institute, and is by carbolized vaccine. During the same year vaccine was dispatched for the treatment of 4,402 persons, of whom 28 contracted rabies (a rate of 0·64 per cent.), 21 being failures, or 0·47 per cent.

Reference has already been made to the statistics of Schweinburg (Vienna), Hempt (Novisad), and Busson.

(5) *Prophylactic vaccination of dogs.*—This question as it relates to the town of Milton (U.S.A.) is discussed by Withington and Bigelow[13]. Four out of 239 dogs so treated died, but investigation showed that these deaths were not due to the effect of the treatment. A reduction in the prevalence of canine rabies had taken place, but the authors are unable to say whether this is a result of the measures adopted.

(6) *The Virus.*—Bablet[14] discusses the virulence, and the resistance to desiccation and to attenuation by glycerine, of the virus in use in Saigon, which is in its 1,518th passage, and came originally

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[9] La Grèce Médicale. 1925. May–June. Vol. 27. No. 5–6. p. 20.—Deux cas de paralysie faciale double consécutive au traitement antirabique.

[10] Harkins (Malcolm J.). Chemotherapeutic Studies in Rabies.—*Jl. Amer. Med. Assoc.* 1925. June 13. Vol. 84. No. 24. pp. 1797–1798. [6 refs.]

[11] Rochaix (A.). Le traitement antirabique dans la région Lyonnaise, en 1923.—*Jl. Physiol. et Path. Générale.* 1925. Apr. Year 24. Vol. 23. No. 2. pp. 369–372. [1 ref.]

[12] Coonoor, Southern India. The Pasteur Institute of Southern India, Coonoor. The Annual Report of the Director together with the Eighteenth Annual Report of the Central Committee of the Association for the Year ending 28th February, 1925. [Cornwall (J. W.), Director.]—27 pp. 1925. Madras: Printed by the Supt. Govt. Press.

[13] Withington (Paul R.) & Bigelow (George H.). The Milton Experience with Anti-Rabies Inoculation of Dogs.—*Boston Med. & Surg. Jl.* 1925. Sept. 17. pp. 552–555. [5 refs.]

[14] Bablet (J.). Le virus rabique en Cochinchine.—*Ann. Inst. Pasteur.* 1925. Sept. Vol. 39. No. 9. pp. 783–787. [6 refs.]

from Paris. This strain paralyses the rabbit on the 6th day, and kills on the 8th or 9th, and is thus considered to be of greater virulence than those of Paris, Dakar and Tangiers. It resists more than 40 days of desiccation. Ten days immersion in glycerine does not reduce the potency of 2 and 3 day dried cords, it attenuates those which have been dried for 4 and 5 days, and destroys the virulence of those similarly treated for 6 and 7 days. The street virus of Cochin China has, on an average, a 17-day incubation, and is not otherwise abnormal.

Remlinger[15] emphasizes the advantages of keeping glycerinated cords at a low temperature in the ice chest.

An interesting observation had been made by Grjasnov[16]. He finds that loss of virulence occurs less rapidly if oxygen is excluded. Cords which were submitted to slow drying (over caustic potash) in the absence of oxygen remained virulent after 17 days, whereas under the usual conditions they became avirulent in 4 days. Cords kept in a moist chamber also lost virulence in 4 days in the presence of oxygen. He considers that the protective action of glycerine depends solely upon its power of excluding oxygen.

(7) *Pathology.*—França[17] has conducted an investigation into the nature of the disease in a number of animals belonging to various families. He finds an apparent difference in their susceptibilities to rabies among the rodents. The percentage death rates of different species were as follows:—*Mus decumanus* 90, *Mus musculus* 80, *Mus decumanus* (var. *albina*) nil, and *Mus musculus* (var. *albina*) 44 per cent. The death rate for *albina decumanus* was calculated from observations on 12 animals.

He found that the only pathological condition constant in all species was hypertrophy of neurofibrils. Perivascular infiltrations and nodules of Babes were observed in most—van Gehuchten's nodules were never found in rodents, or insectivora. No examination was made for Negri bodies.

(8) *Diagnosis.*—Two new methods of staining Negri bodies have been described. For the first, due to Campanacci[18], are claimed the advantages of rapidity and ease. The detail is as follows:—

Fix cubes of 3 or 4 mm. in linear dimension in Schaudinn's fluid for about six hours: dehydrate in 95 per cent. and Abs. alc.: Xylol and Xylol paraffin in incubator: cut sections 5–6μ: Xylol: alcohol: Iodized alcohol to remove excess of mercury: wash in alcohol: then aq. dest. Stain for 5 minutes in the following solution:—

Acid fuchsin (1 per cent. aequeous)	10 drops.
Glacial acetic acid	10 drops.
Aq. dest.	10 cc.

The sections are at this stage an intensive red colour. Wash rapidly in aq. dest.: place for 5 minutes in a freshly prepared solution of

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15 Remlinger (P.). A quelle température faut-il dessécher et conserver les moelles rabiques?—*C.R. Soc. Biol.* 1925. June 12. Vol. 93. No. 20. pp. 19–20. [3 refs.]

16 Grjasnov (N. I.). Influence d'air et de glycérine sur le virus fixe.—*Rev. Microbiol. et Epidémiol.* 1925. Vol. 4. No. 2. French summary p. 116. [In Russian pp. 83–87.]

17 França (Carlos). Pathologie comparée de la rage. Recherches personnelles servant d'introduction à de futures investigations.—*Arch. Inst. Pasteur de Tunis.* 1925. July. Vol. 14. No. 3. pp. 309–324. [21 refs.]

18 Campanacci (D.). Un nuovo metodo pratico di colorazione dei corpi di Negri.—*Sperimentale.* 1925. Oct. 17. Vol. 79. No. 5. pp. 665–667. With 1 plate.

Glacial acetic acid (1 drop in 1 cc. aq. dest.) : wash in distilled water : place for 15 minutes in Franckel's solution (saturated aequeous solution of picric acid 200 cc., Indigo-carmine 0·5 gm.). The section loses its red colour, and becomes a uniform green. Wash rapidly in aq. dest. : 95 per cent. alc. : Xylol : balsam. The bodies appear carmine on a yellow ground, and show very clearly the corpuscles of Volpino. Nucleoli are a pale rose, and are easily distinguishable from the bodies.

The second method is due to TUREVICH[19], and is as follows :—

The hippocampus is hardened in acetone for 1 to 2 hours, the acetone being changed at least once. Embed in paraffin, and cut sections not thicker than 3 to 4 μ. Attach sections to slide according to the method of Henneguy : remove paraffin and stain for 2 minutes in a freshly prepared solution of Weigert's iron haematoxylin : wash quickly in water, and place for 1 minute in a 1 per cent. aequeous solution of acid fuchsin : wash thoroughly until colour begins to pale. Decolorize in a mixture of equal parts of saturated aqueous solution of picric acid and 95 per cent. alcohol. During this process clouds of colour are given off, and after 10–20 seconds the sections become yellow to transmitted light. Wash for a few seconds : dry with filter paper, and in air : abs. alc. : oil of cloves : xylol : Canada balsam.

By this method the chromatin of the nuclei appears dark brown, the protoplasm of the cells is dark olive. Negri bodies are stained a cherry red, and show some internal structure. Erythrocytes are stained somewhat similarly (crimson).

Miscellaneous.—HERRMANN[20] reports a death from rabies in a girl who was scratched by the claws of a hound. In another paper[21] he deals with the infectivity of the cerebrospinal fluid of persons suffering from rabies. This is found in some patients, but not in others, and hence is of little value diagnostically. In a third communication[22] HERRMANN shows how intracerebral inoculation of rabbits may be performed without the aid of an assistant. In a fourth[23] he examines the duration of immunity, and decides that a second treatment is necessary for a person who has been bitten more than 3 months after the completion of treatment.

SCHNÜRER'S[24] and BUSSON'S[25] papers in the *Wiener Klinische Wochenschrift* are of the nature of a personal controversy.

A. G. McKendrick.

19 TUREVICH (E. I.). Novi Sposob Okraski Telez Negri pri Besheustre. [A New Method of Staining Negri Bodies in Rabies.]— *Vjestnik Microbiologii & Epidemiologii*. Saratov. 1925. Vol. 4. No. 1. pp. 71–72. [3 refs.]

20 HERRMANN (Otto). Tod an Lyssa nach dem Spielen mit einem Schoosshunde. —*Cent. f. Bakt.* I. Abt. Orig. 1925. Aug. 1. Vol. 95. No. 7-8. pp. 428–429. [6 refs.]

21 HERRMANN (Otto). Die Virulenz der Zerebrospinal-flüssigkeit beim wutkranken Menschen und die Vererbung der Wut.—*Cent. f. Bakt.* I. Abt. Orig. 1925. Aug. 1. Vol. 95. No. 7-8. pp. 429–431. With 1 text fig. [5 refs.]

22 HERRMANN (Otto). Intrazerebrale oder subdurale Infektion der Kaninchen ohne Assistenten.—*Cent. f. Bakt.* I. Abt. Orig. 1925. Aug. 1. Vol. 95. No. 7-8. pp. 432–433.

23 HERRMANN (Otto). Ueber die Dauerhaftigkeit der Immunität gegen Tollwut. —*Cent. f. Bakt.* I. Abt. Orig. 1925. Aug. 1. Vol. 95. No. 7-8. pp. 433–436. [3 refs.]

24 SCHNÜRER (Josef). Zur Frage der prophylaktischen Impfung der Hunde gegen Lyssa.—*Wien. Klin. Woch.* 1925. Oct. 15. Vol. 38. No. 42. pp. 1133–1134.

25 BUSSON (Bruno). Zur Frage der prophylaktischen Impfung der Hunde gegen Lyssa.—*Wien. Klin. Woch.* 1925. Oct. 15. Vol. 38. No. 42. pp. 1134–1135.

MISCELLANEOUS.

Foley (H.) & Meslin (R.). Exploration scientifique des oasis du Gourara et du Touat (Mars-Avril 1913). [**Scientific Exploration of the cases of Gourara and Touat.**] —*Arch. Inst. Pasteur d'Algérie.* 1924. Sept. Vol. 2. No. 3. pp. 263–302. With 3 maps & 16 figs. [42 refs.]

An interesting report of an expedition made 11 years ago through the typical Saharan desert tracts of Southern Algeria to the oases of Gurara and Twat. These oases skirt the relics of a chain of lakes or river which in the time of the fathers of the present generation floated feluccas. The waters that still exist are distributed for use in underground canals. The inhabitants are Berbers, Arabs, and lower classes of negroes and negroids; many of them have never been beyond their own district, and their only communication with the world is by visiting caravans. Dates are the principal food and their sole trade. Cereals and vegetables just about sufficient for use are cultivated. There are some domestic animals—camels, goats, long-legged sheep, fowls—though not enough to use as daily food. Caravans sometimes bring dried meat, and locusts can be eaten. On the whole, food is never plentiful, and there are times when the people are on the verge of starvation. Malaria is endemic. Of 1,190 children up to 15 years of age examined, 6·2 per cent. had parasites in the blood without enlargement of the spleen, 1·4 per cent had parasites and enlargement of the spleen, and 2·8 per cent. had enlargement of the spleen without discoverable parasites. All the three usual species of malaria parasites were observed. The examination was made in March-April. At that time there were no adult mosquitoes; but their breeding-places were quite numerous, in which *Anopheles multicolor* was the only species found. Tuberculosis exists; cutireaction tests of 601 children from 1 to 15 years of age were made, with positive results in 40·2 per cent. Trachoma is prevalent: 2,050 individuals, male and female, of all ages, were examined, all but 179 being negro or negroid, and evidence of the disease, and of its being acquired early in life, was found in 88 per cent.; these observations hardly verify the belief that the negro—apart from his native environment—enjoys natural immunity.

The report includes observations on veterinary pathology and annotated lists of the animals and plants collected. Among the animals the following may be noticed:—Ticks (*Argas persicus*), insects (two species of Tabanus, *Holoconops mediterraneus*, larvae of *Anopheles multicolor*, Culex, and Theobaldia, *Haematopinus ovillus*), mollusca (*Melanopsis cossoni* and other species, *Melania tuberculata*, and *Limnaea palustris* var. *corvus*).

A. Alcock.

Braimbridge (C. V.). **Some Surgical Cases of Interest recently seen in the Native Hospital, Nairobi.** *Kenya Med. Jl.* 1925. July. Vol. 2. No. 4. pp. 121–124.

Five interesting cases are here reported; they illustrate the far-spreading influence—quite unappreciated by the average politician—of the well-trained medical officer among native tribes.

(1) A male adult Masai, with 2 painful abdominal tumours said to be of 2 years' gradual growth. At operation they were found to be hydatid

cysts, but merely 2 of many scattered through the entire mesentery. Two separate operations were necessary for their complete removal, a pailful being removed at the first. Twelve days after the second the patient went away quite recovered.

(2) A young male Msambara, pale and wasted, with pain and swelling in the spleen region of a year's duration, and a story of attacks of fever and of painful vomiting after meals. No fever beyond two slight rises in first 14 days; no evidence of malaria or kala azar; but there was an eosinophilia, probably explained by tape-worm eggs in the faeces. A course of quinine orâ and antimony-tartrate intravenâ had no effect. A month after excision of the spleen the man was in normal good health. The spleen, which weighed between 50 and 60 oz., showed "slight fibrosis and atrophy of the cellular elements." The author suggests Egyptian splenomegaly.

(3) An adult male Muganda, with pain below the right ribs of a year's duration. No history of any intestinal disorder. Blood and faex normal; liver dulness increased, and a right hypochondriac tumour suggestive of enlarged gall-bladder. Emetine having no effect, cholecystotomy was done. The gall-bladder was enlarged and thickened among extensive adhesions, and the bile gave an almost pure culture of *Bacillus typhosus*. This discovery furthered examination of faeces and a Widal test, but both were negative.

(4) An elderly Mkamba, with pain and swelling in the abdomen; temperature normal. His abdomen had been deeply pierced by an arrow on an occasion synchronizing with an authentic event of 25 years ago; the shaft of the arrow had been pulled out, but the head had remained, and had given trouble ever since. The swelling, which gave the impression of a tensish cyst, was found, at operation, to be a mass of sterile pus stanchly isolated by omentum and adhesions; and when 12 ounces of pus had been removed an included arrow-head was found and extracted. A drainage tube was inserted, and at the time of this record the patient is in excellent health.

(5) A Kikuyu boy, who had imbibed a leech. The tail of the leech could be seen hanging from the nasopharynx. A strong solution of common salt was gargled and also syringed through the nostrils and the leech was then extracted by the tail with a bullet forceps.

A. A.

Corrado (Eugenio). Contributo alla geografia medica della Somalia Italiana. [**The Medical Geography of Italian Somaliland.**]—*Pathologica.* 1925. August 15. Vol. 17. No. 402. pp. 438–441.

The author, at the invitation of the Governor of Italian Somalia, spent seven months, from September 1924 to April 1925, in Wagoscia, and records in this paper the chief diseases met with. The district must be a veritable gold-mine for the clinician and pathologist. Very few details are given, and so short a stay could hardly have allowed for much in the say of minute investigation. Most of the diseases incidental to warm climates were observed. Mention is made of the following:—Malaria, tertian and subtertian; trypanosomiasis (animal), conveyed by *Glossina pallidipes*; dysentery, amoebic and bacillary; yaws and syphilis; relapsing fever associated with *Sp. duttoni* and transmitted by *O. moubata* and *O. savigni*; dengue; mycetoma; tuberculosis and bronchial spirochaetosis; actinomycosis and sporotrichosis; schistosomiasis, both vesical and intestinal; elephantiasis; helminthic infections are represented by Trichuris, Ascaris and Oxyuris. Cutaneous ulcerations are frequent. Notable diseases not met with were:—Enteric fever; undulant fever; leishmaniasis (which, it is

stated, may possibly exist, although the author himself saw no cases), and ankylostomiasis. Leprosy is very rare, only one case being encountered.

H. Harold Scott.

United Fruit Company. **Medical Department. Thirteenth Annual Report. 1924.** [Deeks (William E.).]—247 pp. With 1 map and 14 figs. [35 refs.]

This Report is full of matter to interest both the practitioner and the hygienist. Of 1,952 white employees from temperate zones 15 died in 1924, but only 2 from infections of distinctly tropical origin—malaria and blackwater fever. The principal infections resulting in the repatriation of employees during 1924 were tuberculosis 25 per cent., beriberi 15 per cent., malaria 13 per cent., chronic nephritis 10 per cent—63 per cent. These four conditions were responsible for more than half the total number of deportations.

Dr. Deeks writes that it is impossible to emphasize too strongly the importance of careful and complete laboratory examinations of all patients treated in tropical localities. That those of the United Fruit Co. get them is evidenced by the table :—

	1923.	1924.
Hospital patients	28,398 ...	29,766
Blood examinations...	31,378 ...	39,508
Urine examinations	28,560 ...	33,524
Stool examinations	25,887 ...	28,753

A table is given of secondary diagnoses among discharged hospital patients, which brings out the prevalence of malaria, syphilis and hookworm [number of worms not stated]. To these diseases "is attributable the greater proportion of the morbidity in the Tropics of the Western Hemisphere." Of cases at the Almirante Hospital in Panama malaria was present in 53 per cent., hookworm in 50, and syphilis in 7 per cent. A questionnaire was submitted to each salaried employee of the Tropical divisions of the Company who was born in the Temperate Zone. From 1,000 of these the following data were derived :—

"The typical 'Average Employee' had resided in the Tropics for 6 years and 11 months. He was absent from duty, from all causes, 6·23 days during the first year; and, of this number of days' absence, 3·35 were due to illness. The second year of residence he was incapacitated 4·8 days on account of illness. During his entire period of residence in the Tropics, he loses 3·35 days annually owing to illness; averaging 1·45 days in the hospital. He loses an additional 1·9 days, absent from duty, but not sent to the hospital. In other words, for 43 per cent. of the time he is ill, he is confined to a bed; and for the rest of the illness period (57 per cent.), while he is not capable of assuming his duties, still he does not find it necessary to remain in bed.

"Approximately 41 per cent. of the employees entered the hospital for treatment during the period of their employment (6 years, 11 months), while about 59 per cent. did not.

"In the course of 6 years and 11 months, 1,000 employees were absent from duty 23,121 days, including 10,038 days spent in the hospital.

"Approximately 99 per cent. of the employees had been vaccinated, and 96·5 per cent. received successful vaccinations. 2·6 per cent. did not have positive results, despite repeated vaccinations.

"The hearing of 7·1 per cent. was below normal,—while 30·7 per cent. wore eye-glasses all or part of the time.

"Either life or accident insurance is carried by 51·2 per cent.

"It was found that 72·3 per cent. of the employees remained in the Tropics for more than one year of continuous service.

"An especially interesting fact is that 17·9 per cent. of the employees abstain from the use of tobacco, and 25·4 per cent. abstain from the use of any kind of alcoholic liquors.

"Among the persons submitting questionnaires, the following percentages reported excessive use of the products here named: Canned goods, 4·1 per cent.; tobacco, 4·1 per cent.; green vegetables, 2·3 per cent.; meat, 1·8 per cent.; sugar and starchy foods, 2·0 per cent.; coffee 0·1 per cent.

"The data show that 38·8 per cent. of the employees were married, and in the families of these employees there were 383 children born in the Tropics. Of this number, 357 children survived the first year, so that there was an infantile death rate of 67·89 per 1,000. While we do not possess a record of the present ages of the children, there are 342 still surviving—a fact which indicates that the mortality among children born and raised in our divisions is not higher than in northern climates.

"It is interesting to know that 44·6 per cent. of the employees in the tropical divisions have not suffered from any disease or illness during their residence there.

"The only conditions causing much morbidity among salaried employees, and the percentage of such employees contracting these conditions, are: Malaria, 44·9 per cent.; dysentery, 5·3 per cent.; influenza, 4·1 per cent.; appendicitis, 3·0 per cent.; typhoid fever, 1·8 per cent.; pneumonia, 1·7 per cent.; external causes, 1·7 per cent.; hookworm, 1 per cent.; boils, 1·1 per cent.; ulcers, 1·0 per cent.; rheumatism, 0·8 per cent.; yellow fever, 0·8 per cent.; jaundice, 0·7 per cent.; blackwater fever, 0·7 per cent. None of the other diseases was responsible for more than half of 1 per cent. morbidity.

"Of the employees, 39·3 per cent. were working in screened quarters, and 60·7 per cent. were working outdoors or in unscreened quarters. However, 97·6 per cent. slept in screened quarters or under mosquito nets. Apparently, the fact that employees worked in screened quarters had little bearing upon the morbidity from malaria, for 43·2 per cent. of the employees working in screened quarters contracted this disease, as compared with 44·9 per cent. among all employees. But it must be remembered that few of the salaried employees were on duty during the hours when mosquitoes are a menace.

"There were 596 cases of malaria among the 1,000 employees averaging 6 years and 11 months of residence, or 86 cases per 1,000 employees annually. Each case averaged 8·9 days in the hospital, and was incapacitated for duty 15·2 days. Only 11·2 per cent. of the cases reported any marked after-effects from the attacks of malaria, and in practically all these instances the only bad effects were loss of weight and general weakness lasting for from 1 or 2 weeks to 6 months. Only 4 cases reported more or less permanent detrimental results: (1) Weak, deaf, dumb and blind temporarily; (2) bad memory; (3) weak eyesight; and (4) jaundice.

"Among the 449 patients suffering from malaria, 162 (36·1 per cent.) had one or more recurrences during their period of residence averaging 6 years and 11 months.

"Of the employees, 17·8 per cent. contracted malaria during the first year of residence in the Tropics. During the second year of residence, 9·0 per cent. of those who previously had developed no symptoms of infection, contracted malaria."

Less than 1 per cent. of the employees, or seven persons, developed blackwater fever during their tropical residence. Details of each are given, and it is noted that subsequent to the attack these persons were apparently immune to malaria for a number of years. Some pages are given to accounts of cases treated with mercurochrome soluble. Twenty-six cases of pneumonia were thus treated with five deaths, or

less than 20 per cent., whereas the mortality in that division over a period of four years was 49 per cent. 15 cc. of a 1 per cent. solution was given every second day while the fever lasted. It is concluded that mercurochrome materially lowers the death rate, hastens the crisis, and shortens the period of convalescence. The general conclusion is drawn that "mercurochrome is a valuable addition to our medical armamentarium in the treatment of many conditions encountered in the Tropics."

At the Tela Hospital, a thin and a thick blood film was made from each patient admitted to hospital; of 702 positive films—

The thick film was positive 427 times;
The thin film was positive 16 times;
Both films were positive 259 times.

"Thus there were 152 examinations that would have failed to disclose the presence of parasites by the old thin-film method." The following pair of tables is instructive :—

Incidence of Malaria at Autopsy.
(Disregarding the disease causing the death.)

	Cases.	
Parasites and pigment, present in ...	25	
Pigment present in spleen and rib marrow, in	29	(78·2 per cent. positive)
Negative for pigment or parasites, in ...	15	(21·7 per cent. negative)

Same Cases before Death.

	Per cent.
Positive for malaria	39·1
Negative for malaria	52·1
Died before an examination could be made ...	8·6

An investigation by Dr. Hegner in three tropical divisions, in which 286 stools were promptly examined once, showed *Trichomonas hominis* to be present in 20·6 per cent., *Chilomastix mesnili* in 7·7 and Giardia in 2·1 per cent. He attributes the high incidence of the first two to (1) the high temperature and moist climate, (2) the insanitary habits of the natives, and (3) vegetable diet. These results are compared with those of Jepps and of Boeck & Stiles [this *Bulletin*, Vol. 20, p. 781; Vol. 21, p. 422].

A. G. B.

Robineau (Marcel). Les causes de la morbidité dans le bataillon de tirailleurs sénégalais d'Arles-sur-Rhône pendant l'hiver 1924-1925. **Causes of Illness in a Senegalese Battalion at Arles during the Winter of 1924-5.** —*Ann. de Méd. et de Pharm. Colon.* 1925. May–June–July–Aug. Vol. 23. No. 2. pp. 315–324.

The Senegalese battalion reached France from Constantinople, where it had passed the preceding winter, in September, 1923. To fill numerous gaps two drafts were received from Africa, one in April 1924, the other in July. There were thus three categories of men—(1) seasoned and selected native soldiers, (2) the first draft which had become almost completely acclimatized before the winter 1924-5, and (3) the second draft which had not had time to become acclimatized. The town of Arles, 86 miles from Marseilles, is in winter subject to the mistral and wide differences of temperature in the 24 hours. The

soldiers' home (Foyer du Soldat) is, or was, situate on the north side of the barrack in a half basement, and other unsatisfactory details are given. Each draft was medically examined on arrival; the first was fairly satisfactory, in the other there were cases of mumps, malaria, alastrim and other affections. The table shows the differences in morbidity and mortality between the three categories. Another table shows the source of these native troops; they came from 51 "circles" in various parts of French West Africa; no racial differences were detected.

Nine-tenths of the morbidity and mortality at Arles were due to the pneumococcus, which is especially deadly when the troops have to endure their first cold weather before their sixth month. Measures calculated to minimize these losses are suggested, e.g., more careful examination at the monthly inspection, weekly inspection of the ailing, who would be put on light duty, early evacuation to the Frejus hospital, where cases of early tuberculosis are watched, of any ill over a month. [It is unfortunate that the author gives no indication of the numbers in each group.]

Period from March 15th, 1924, to February 15th, 1925.

Categories.	Number. Exemptions from service.	Admissions to infirmary.	Admissions to hospital.	Evacuations to tuberculosis hospital.	Deaths.
	Per cent.	Per cent.	Per cent.		
Constantinople nucleus ...	104	30	12	7=2%	4=1.1%
April draft ...	241	86	31	14=5%	0
July draft ...	412	139	47	15=7·5%	14=7%

A. G. B.

Moragas y Gracia (Ricardo). Ueber die Häufigkeit und die Besonderheiten einiger parasitärer Krankheiten in Spanien. [**The Frequency and Features of some Parasitic Diseases in Spain.**]—*Beihefte z. Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Vol. 29. No. 1. pp. 261–268.

The author, who is Professor of Bacteriology and Hygiene at Barcelona, discusses malaria, leishmaniasis and rat-bite fever in Spain. No province is quite free from malaria. Recent statistics show that the annual mortality exceeds 2,000 and taking the mortality to the morbidity as 8 : 1,000 he estimates that nearly 250,000 cases occur yearly, a loss of more than 5 million working days. He divides Spain into three areas according as the malaria mortality lies between 10·4 and 1·5 per 10,000, 1·4 and 0·4, and below 0·4 per 10,000, naming the provinces included in each category. The disease is endemic chiefly in the south and east, but the most afflicted province is an internal one, Caceres, where in 1923 41 per cent. of 7,134 persons were microscopically diagnosed as infected. There are four foci in Catalonia, the most severe near Tortosa at the mouth of the Ebro; in this division of Spain a Society is at work combating the disease. The commonest form is the tertian and, next, the quartan. Subtertian is found at Tortosa, and is frequent in Caceres and a large part of Andalusia.

Kala azar was first found in Spain in 1912, at Tortosa. Many cases have since been identified and more than 100 are now known [according

to PITTALUGA 343 cases have been proved bacteriologically]. The disease is found in the coastal strip which borders the Mediterranean and also in provinces far removed from the sea, as Caceres and Madrid. The author has diagnosed four cases in children at Barcelona by spleen puncture, and gives a description of them. Oriental sore occurs on the Granada coast and in South Spain; no figures are given.

He has seen two cases of rat-bite fever but has not apparently detected the Leptospira. One case, that of a child bitten in its cradle, had just completed a course of anti-rabic treatment, on medical advice. Other cases have been reported.

A. G. B.

FRANCHINI (G.) und Mitarbeiten. Arbeiten aus der Scuola di Patologia Coloniale der Universita di Bologna (Italia). [**Papers from the School of Tropical Medicine, University of Bologna.**]—*Beihefte z. Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Vol. 29. No. 1. pp. 108–119.

G. Franchini and his colleagues contributed several short communications to this "Festschrift."

FRANCHINI himself reports two cases of amoebic cystitis from an area in Bologna where there is a focus of amoebic dysentery. In one case there was concomitant dysentery, in the other the symptoms concerned the bladder only. There is no description of the parasites. FRANCHINI and GHETTI describe a case of rat-bite fever in a boy from Faenza, in Bologna. The spirochaete was found in centrifuged blood obtained in a bout of fever, of which there were 11 attacks in all, and the organism was recovered from one of three inoculated guineapigs. A dose of arsenobenzol brought the illness to an end. FRANCHINI and MAGGESI describe a case of blackwater fever in a man from Belgian Congo, who died at Bologna in his third attack. Laboratory investigations in life were made as well as a post-mortem. No signs of Plasmodium could be found, but spirochaetes were obtained from the blood and from the spleen after death, and were transmitted to guineapigs. [The details are meagre.]

COSIMO examined over a thousand Anopheles collected from houses and byres respectively in Emilia and Ferrara. The maxillary teeth varied in number between 14 and 15, whether malaria was present or no, and not in accordance with ROUBAUD's observations. EUGENIO gives a brief description of the diseases met with in six months in the Wagoscia district of Italian Somaliland (Juba river). MARTINELLI states that limited and transitory epidemics of bubonic plague have recently occurred over nearly the whole of Somaliland. That which came under his observation began in 1923, spread gradually to about 50 villages on the middle Uebi Shebeli river and in January 1925 had disappeared. The epidemic was relatively mild; the river was an important factor of spread, especially when in flood. Further details would be of interest.]

PULLÈ has made 160 examinations of cases of appendicitis for amoebae and flagellates – fresh and stained smears and sections – with the following results: *E. histolytica* 10 per cent., *E. coli* 5, undetermined amoeba 8·5, flagellates 2·1, *Blastocystis hominis* 43·7 per cent. no figures for healthy appendices]. He thinks that in every case of appendicitis the stool should be examined for parasites and the appropriate parasiticidal drug given.

A. G. B.

Spaar (Eric C.). **Some Observations on the Common Endemic Fevers of Ceylon.**—*Jl. Trop. Med. & Hyg.* 1925. Oct. 1. Vol. 28. No. 19. pp. 349–352. [6 refs.]

Malarial fevers.—Carter in Ceylon finds that splenic enlargement in school children reaches a percentage of 60–70 in the northern half of the island and 40–50 in the south-east; the hilly districts and the south-west are free from malaria. At the Colombo Hospital benign tertian accounts for 80 per cent. of malarial cases, and subtertian for 18 per cent., but a large percentage of the cases are relapses; only one case of malarial haemoglobinuria (which the author distinguishes from the unknown blackwater fever) has been heard of in 18 years. Sequelae mentioned (without details) are "those affecting the nervous system", cirrhosis of liver, diabetes (three cases, see also this *Bulletin*, Vol. 19, p. 293), myocardial degeneration causing chronic heart disease, and chronic Bright's disease.

Intestinal fevers. Of these, typhoid is by far the commonest, and a special hospital has been built for the patients in Colombo. The type is mostly mild, certainly milder than two decades ago, but in Europeans it is severe. Of complications parotiditis is most common and then haemorrhage. About 3 per cent. of intestinal fevers are paratyphoid A which runs a mild course; paratyphoid B is very infrequent, and of paratyphoid C there is no record.

Parenteric fevers.—These give negative agglutination tests for the enterica group. Some in Ceylon are due to *B. columbensis* and *B. asiaticus* of Castellani. The prognosis is very favourable. Reference is made to Khaled's paper [*l.c.* Vol. 21, p. 662].

Relapsing fevers.—Unknown in Ceylon except for rat-bite fever.

Kala azar. True kala azar is not seen, but "pseudo-kala azar," with the symptoms of anaemia, emaciation and splenomegaly, is by no means infrequent.

Dengue and allied fevers.—Dengue first appeared in 1905: it is prevalent in the low-lying sea-coast towns in the south-west monsoon but not inland: it produces the saddleback type of temperature and joint pains, which, however, are less severe than formerly.

Filarial fever.—Is very frequent and usually mistaken for malaria, especially before elephantoid changes have occurred.

Plague.—Is not seen outside Colombo.

Fevers due to helminth infection.—Fever in hookworm infection is either intermittent or irregularly remittent; it is stated that splenic enlargement is found with this infection apart from malaria. This and fever due to *A. lumbricoides* infection are often thought to be enteric.

A. G. B.

Seyfarth (Carly). Infektionskrankheiten und ihre Bekämpfung unter den kleinasiatischen Flüchtlingen in Griechenland, Kreta und Korfu. [**Infectious Diseases and their Control among the Refugees from Asia Minor in Greece, Crete and Corfu.**]—*Ztschr. f. Hyg. u. Infektionskr.* 1925. June 6. Vol. 104. No. 4. pp. 682–702. [35 refs.]

Since the winter of 1922-3 a compulsory migration on a vast scale has been taking place between Asia Minor and Greece. We are concerned here with the one and a half million Greeks who left Asia Minor unrecorded thousands of whom have succumbed to infectious disease

The author with the support of the Greek Government visited the mainland, Crete and Corfu from August to the end of October of 1924 and gives an account of the epidemic diseases among these refugees.

Typhus.—This disease was almost unknown in Greece before the Great War. In 1917–19 there were epidemics of moderate extent and in 1922–3 outbreaks in almost all the towns. With the return of the Greek army after the fall of Smyrna, Piraeus and other towns were flooded with lousy soldiery, and fresh fuel and infection were added with the first rush of fugitives. Exact figures cannot be given, but at the Piraeus infectious diseases hospital in 1923 1,286 cases of typhus were treated with 172 deaths (13·5 per cent.). The course in the refugees was much milder than in the natives, a mortality of 7–10 per cent. as against 18–30 per cent., owing to the fact that the disease is widespread in Asia Minor and the refugees had some degree of immunity. In its control the measures taken had some effect, but probably less than the hot summer and burning sun of Greece had on the lice. By the middle of 1924 when the disease had almost disappeared effective quarantine stations were in use at Salonica and Piraeus.

It was observed here as elsewhere the children often had very mild attacks.

Relapsing fever.—Relapsing fever was almost unknown before the Balkan wars and was introduced with the troops returning from Macedonia. It increased when typhus did, but was never so severe and by the summer of 1923 there were only a few cases.

Smallpox.—An outbreak of smallpox occurred at Piraeus in November and December 1922 with the arrival of the first refugees. Of 749 cases in the infectious hospital 34 per cent. died. The movement of the fugitives carried the disease to many of the islands, where severe epidemics occurred. In January vaccination on a large scale was commenced, and in Athens and Piraeus 500,000 refugees and 250,000 natives were vaccinated. By this means the epidemic was brought to a standstill. During the author's visit he did not see a single case.

Bacillary dysentery. Bacillary dysentery, previously present in Greece, flared up in the refugee camps in summer and autumn of 1923, where crowding, want of hygiene, the plague of flies, favoured its spread. At Salonica between September 1922 and November 1923, 998 refugees died from this cause, and at Piraeus 889. GAUTHIER'S Commission carried out prophylactic immunization by the mouth, and 30,000 persons were so treated in summer and autumn of 1923 see this *Bulletin*, Vol. 21, p. 354.] The results appear to have been good. The following is worth quotation :—340 refugees in a camp at Phaleran were vaccinated by the mouth and transferred to new barracks alongside those occupied by other refugees among whom dysentery was epidemic. They drank the same water, which was much fouled and was doubtless the source of the dysentery, but the newcomers were not affected. The Greek doctors told the author of other instances in which oral vaccination gave protection.

Amoebic dysentery.—This form of dysentery did not affect the refugees. It is, however, not uncommon in Greece, and the author in his brief visit saw four cases in persons who had never left their home country ; in one of these, autopsy revealed a liver abscess.

Cholera. -No cases occurred among the refugees, but whether this was due to the "tetravaccine" they received the author cannot say.

Enteric fever.—Enteric is endemic in many Greek towns, especially Athens, where the water supply is both bad and insufficient, so that the inhabitants are often dependent on polluted sources. Small epidemics occurred among the refugees. The "tetravaccine" (typhoid A and B, cholera) was used on a big scale—up to October 1923, 1,143,961 inoculations, and an oral vaccine also to a smaller extent.

Paratyphoid A and B.—These forms are widely distributed in Greece, but did not spread much among the refugees.

Trachoma.—Trachoma is a serious disease in many parts of Greece, especially on the islands. In a small town in Crete half the inhabitants were trachomatous. The danger of its spread by the refugees is great, and the author saw very many cases among the refugees in Corfu, where the affection is rare.

Tuberculosis is very prevalent among both the inhabitants and refugees. In Athens in 1923 it accounted for 19·8 per cent. of the total mortality.

Malaria.—In ordinary times malaria is very prevalent in Greece; it is stated that between 1900 and 1914 the average percentage affected yearly was 29, Salonica, Macedonia, Thessaly and West Thrace being the most affected districts, and the years of unrest before the great war increased the malaria. From November 1922 onwards 120,000 refugee families, say 520,000 persons, were settled in Macedonia and West Thrace under conditions of deficient nourishment and unusually heavy rains. In a camp nearby Salonica between July and October 1923, of 10,000 persons 90 per cent. had malaria, and of these 700 (70 per mille) died, and other similar statistics are given.

Blackwater fever was not infrequent where malaria was severe.

Plague.—Plague was introduced into Piraeus in 1913, and every year since between July and December there have been 20 to 30 cases. After the war it spread to other ports, and in 1914 appeared in nearly all, probably owing to the trade in corn. However, it never appeared in refugee camps, nor did it spread inland.

The paper concludes with an account of the exotic diseases met with in Greece. A list is given of the numerous places where *kala azar* is found. Six cases were shown to the author on the small islands of Spezzia and Hydra and a healthy man of 18 who had suffered from the disease as a child (Leishmania found). Lignos, who has practised medicine on Hydra for 24 years, says that 10 per cent. recover without treatment. *Dermal leishmaniasis* also occurs, especially in Crete. In Canea ("Caneotika" is the vernacular for tropical sore) 20 fresh cases were shown to him. Phlebotomus is common in the Cretan towns. *Pappataci fever* was shown to be common many years ago, but now is seldom recognized and usually treated as malaria. It does not seem to have affected the refugees much. *Dengue* occurs, but was not seen by the author. *Undulant fever* is widely spread on the mainland and islands. The use of sheep and goats' milk is general. The disease is seldom diagnosed bacteriologically, and the author met with cases regarded as tuberculosis. *Leprosy* also is common, especially in Crete (*l.c.* Vol. 22, p. 568). *Mycetoma* was reported in 1912. It is not uncommon and probably most cases are taken for leprosy. *Pellagra* was spoken of in Corfu and the Ionian Islands. *Ankylostomiasis* is rare.

A. G. B.

LEVADITI (C.). **The Therapeutic Properties of Stovarsol (Acetylamino-phenylarsinic Acid, "190").**—*Lancet.* 1925. Sept. 19. pp. 593–595. [39 refs.]

Stovarsol, the acetyl derivative of amino-oxy-phenylarsinic acid, was prepared in Germany in 1908 but was not systematically studied, because its arsenic was in pentavalent form, till 1922, when FOURNEAU and his co-workers purified it and tested it on animals and man by injection. Levaditi then tried it by the mouth and found that it had a distinct prophylactic and curative action in syphilis. It is in fact distinctly more active after ingestion than after parenteral employment, owing probably to changes which take place in the intestine and liver. The author proceeds to review the records of its use in syphilis, in yaws, in amoebiasis, lambliasis, "blastocystic diarrhoeas" and malaria; many of the papers have been summarized in these pages. The conclusion is that stovarsol, given by mouth, is more or less effective in all these conditions. "The efficacy of the method and its exceeding simplicity, . . . render it worthy of the attention of medical men." The list of papers will be very useful to the serious enquirer.

A. G. B.

KESSLER (Adolf). Ueber das Verhalten des Yatrens im Organismus. [**Behaviour of Yatren in the Organism.**]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Aug. 1. Vol. 29. No. 8. pp. 380–387. [10 refs.]

The results of the author's experiments, samples of which are set out in tables, led to the following conclusions:—

Yatren cannot be introduced into the organism by inunction. Iodine must be split off in the tissues. Iodine and yatren are excreted in the urine most quickly after intravenous and intramuscular injection. The excretory period for iodine is longer with the intravenous than the intramuscular route. The elimination of both substances in the urine is delayed and decreased in administration by the mouth, suggesting increase in the excretion by the intestine.

A. G. B.

CHAU (K. T.) & WRIGHT (J. M.). **Gynecological Notes: Canton Hospital.**—*China Med. Jl.* 1925. Aug. Vol. 39. No. 8. pp. 684–687.

The statistics of menstruation and the menopause, etc., here presented were obtained incidentally from 2,291 patients at Canton, where the climate is subtropical. It must be premised that owing to the Chinese method of computing age, one year has been deducted in all instances from the age stated. The patients were of all classes. The summary is as follows:—

"1. Average age of Chinese girls at onset of menstruation, 14·5 years.
"2. Average age of Chinese women at menopause, 45 years.
"3. Average age at marriage, 17½ years.
"4. Average age at birth of first child, 20½ years.
"5. Average number of children of 457 women who had passed the menopause, 5.
"6. Deaths of children, including those of all classes, during first five years of life, about 55·5 per cent.

"7. Deaths of children during first five years of life, among middle and lower classes, about 69·5 per cent. of all children born.

"8. Sex ratio: of 7,854 children, 3,555 (45·27 per cent.) were males, and 4,299 (54·73) were females."

The table gives details of the age of onset of menstruation.

Age at onset (Western reckoning).	Number of cases.	Percentage of total.
9	1	·043
10	2	·086
11	274	11·96
12	154	6·72
13	286	12·48
14	354	15·45
15	505	22·04
16	353	15·41
17	205	8·94
18	70	3·05
19	54	2·4
20	17	·724
21	8	·35
23	3	·13
25	4	·174
26	1	·043
	2,291	

[The authors state that the age of onset of menstruation in Greenland is 17–23. Among the Eskimos, according to STEFANSSON (*Jl. Amer. Med. Assoc.* 1920, Vol. 75, p. 669) there are records of children born before the mother was eleven, and the average of maturity is from the 10th to the 13th year. This he attributes to the fact that the typical Eskimo lives under tropical or subtropical conditions. The average temperature in the house at the mouth of the Mackenzie river in which he lived during a winter was above 80° F. "While an Eskimo is indoors his entire body is exposed to a local climate as warm as that of Sicily, and when he is outdoors he carries that climate about with him inside his clothes and applicable to 90 or 95 per cent. of his body area."]

A. G. B.

AMERICAN MISSION HOSPITAL, Petchaburi, Siam. **Annual Report April 1, 1924 to April 1, 1925.** [NEDERGAARD (Niels).—16 pp. Printed at Wah Cheong Press, Bangkok.

The period really covered by this report is November 1921 to April 1925. The capacity of the hospital is 32 beds. We read:—

"The equipment is very meagre, and the buildings inadequate and unpractical for present day needs. The lower floor of the main building is more than a foot below flood level, making drainage a difficult problem. Under the very eaves of the women's building is a small crowded village over which we have no control. It is a danger in case of fire, and a pest hole of germs and parasites."

The statistics show that 420 patients were admitted to the hospital and 2,100 were seen as out-patients; the great majority were Siamese

and Chinese. The laboratory report shows 600 blood examinations, stool examinations 509, urine 544, sputum 25 ; a total of 1,729. At the head of the list of general diseases occur yaws, typhoid, malaria, syphilis, tuberculosis, leprosy, in that order ; eye disease figures largely. Notwithstanding the unhygienic character of the hospital environment there were only 24 deaths.

A. G. B.

Cleland (J. Burton). **Plants, including Fungi, Poisonous or otherwise, Injurious to Man in Australia.**—*Med. Jl. Australia.* 1925. Oct. 10. 12th Year. Vol. 2. No. 15. pp. 443–451. [48 refs.]

MacPherson (John). **Dermatitis caused by Queensland Maple.** [Correspondence.]—*Ibid.* Oct. 31. No. 15. p. 542.

The author published a paper on this subject in the same Journal in 1914 and now records information that has come to hand since, some from 18th century records in the journals of explorers. It is not possible to give more than a bare catalogue. Among plants injurious on ingestion are included croton berries, acacia seeds (Expedition Range), cassia seeds, eucalyptus oil, the fruits of Macrozamia (a Cycad), Livistona palm, Pandanus fruits (used as food by the aborigines), crude maize, toadstools ; plants containing poisonous alkaloids (all Solanaceae) are : *Solandra longiflora* and *Brugmansia knightii* (local mydriatics), *Duboisia hopwoodii* and *Datura stramonium* ; a plant producing urticarial wheals is the giant nettle, *Laportea gigas* : plants causing inflammation or irritation of the skin and eyes, symptoms which may be due to specific protein sensitization, are : *Pseudomorus brunoniana* and *Ficus stipulata* (Moraceae), common ivy, parsnips, *Grevillea robusta*, species of Anacardium, species of *Melaleuca*, including *linearifolia* (the tea-tree ; the source of irritation may be a hairy caterpillar), several species of Eucalyptus, Acacia species (where again an insect may be the real cause), *Seehium edule* (the effect of which is anaesthetic), hops, stinkwort (*Inula graveolens*), *Xanthium strumarium* (a burr), yams, arums (Colocasia) ; plants causing disorders of the respiratory system are plant pollens, Queensland red bean (*Dysoxylon muelleri*) and various woods which cause nasal irritation, especially the Californian red pine (*Sequoia sempervirens*), a well-known source of irritation in Australian workshops, and finally, red rust spores, inhalation of which may be associated with pneumonia. A case of squamous epithelioma is recorded following injury from a boxthorn prickle, and several plants are mentioned which cause mechanical injuries. The list of references will be very valuable to anyone pursuing the subject.

Dr. Macpherson records a case of acute dermatitis caused by working with the wood of the Queensland maple (*Flindersia* sp. N. O. Rutaceae).

A. G. B.

Harvey (W. F.). **Bacteriological and Laboratory Technique. Section XII. The Microscope.**—*Indian Jl. Med. Res.* 1925. July & Oct. Vol. 13. Nos. 1 & 2. pp. 53–93 ; 229–261.

The author in this monograph on the microscope continues his series of articles on Bacteriological and Laboratory Technique. This is the 12th section of treatment of the subject, which now extends to the proportions of a good-sized volume. It is not only the laboratory

worker who uses the microscope, but every medical man. His knowledge of this important instrument is often very incomplete. In this monograph there is given a wealth of detail of the operations connected with the use of the microscope, and the "notes" which are appended to the description of the technique themselves make a considerable addition to the whole work. There are no illustrations whatsoever, which is very unusual in a subject such as this: but the technique is given step by step in great detail and with a certain amount of repetition, and this should make it easy for the worker to use the descriptions with facility. The subject is treated seriatim according to the parts of the microscope as a whole, and of the photographic camera. In this way we have a description of the use and care and choice of objectives, condensers, oculars, diaphragms, mirrors, stage, etc.; the adjustments connected with focussing, centring, drawing and projection; the various forms of direct and oblique illumination both bright field and dark field; the use of vernier scales; methods of measurement, drawing, determination of magnification, projection, and, indeed, most of the detail of the use of the microscope. A very detailed index on the decimal system accompanies the article, which enables the user to find the point he seeks with great facility whether it be contained under a main heading or under a lesser heading or even in a note.

A. G. McKendrick.

Castellani (Aldo). **Biochemical Characters of Certain Bacteria, when living in Association or Artificially Mixed, and when living Separately.**—*Brit. Med. Jl.* 1925. Oct. 24. pp. 734–735. With 3 text figs.

That the typhoid bacillus and the dysentery bacillus should be shown to be gas producers would certainly be subversive of accepted doctrine. Castellani shows in this article that *B. typhosus*, when grown with *B. morgani* or with *B. proteus* gives rise to gas production in such sugars as maltose, mannitol, and sorbite, although neither organism does so when grown alone in these sugars. Similarly *B. dysenteriae* Flexner can, in conjunction with *B. morgani* or *B. proteus*, give rise to gas production in maltose and mannitol but not in sorbite. In these two cases one of the organisms produces acid but not gas in the sugars concerned—*B. typhosus* in maltose, mannite and sorbite, *B. dysenteriae* Flexner in maltose and mannite—while the conjoined organism ferments none of them. The experimental conditions for the manifestation of this phenomenon are to sow the sugar-peptone water with the one organism and immediately after with the conjoined organism. Incubation is for 48 hours at 35° C. The author concludes:—

"The subject is very obscure and requires much further investigation, but the fact remains that with regard to certain bacilli the mixture of two species may produce gas in certain substances although one species produces only simple acidity, never gas, in them and the other neither acidity nor gas."

W. F. Harvey.

Marshall (Alexander) & Macdonald (Norman). **Hints on Tropical Technique.**—*Laboratory Jl.* 1924. Dec. 11 pp.

This paper is a summary of useful hints for obviating a crop of climatic difficulties that tend to distract laboratory routine in the tropics, such

as the cleansing and storage of slides, cover-glasses, and pipettes; the storage of rubber tubing; the preparation and distribution of culture media; the keeping of stock cultures; the collection of stools for the microscope and the formulation of the results of the examination; the despatch of blood films; the manipulation of the photography room, the ice-chest, and museum jars. It also contains the full descriptions of a method of standardizing the pH concentration of media and of methods of preparing various special media.

From the microscopist's point of view the only item that seems to be omitted is a little advice on choosing lenses for a hot and moist climate.

A. A.

Lichtenstein. (A.). Het witte bloedbeeld in de tropen beschouwd in verband met dat in Europa. [**The Leucocytic Formula in the Tropics Compared with that found in Europe.** — *Nederl. Tijdschr. v. Geneesk.* 1925. Oct. 31. 69th Year. 2nd Half. No. 18. pp. 1972–1979. [11 refs.]

The author examined the blood of 20 Europeans (army medical officers) and 102 native soldiers, all well known to him, in perfect health and living under good hygienic conditions. The food of the Europeans was of the western type (not rich in carbohydrates), the main native food was rice. The natives were regularly subjected to an anti-helminthic regime and filariasis was excluded. The biennial anti-cholera and anti-typhoid vaccination is supposed to have had no influence because the examinations were made three months after the last vaccination. The blood was taken before the first meal. The smears were prepared in the ordinary way. They were examined by moving the slide perpendicularly to its long axis, along lines covering the whole breadth of the film; 400 leucocytes were counted in each preparation.

The greatest aberration from the leucocytic formula usually considered as normal was found in the percentage of lymphocytes:

20 Europeans: 25–58·5, average 44·5 per cent.
66 Javanese: 24·5–68·75, average 42·5 per cent.
27 Menadonese: 26–68, average 43 per cent.

The factor of carbohydrates in the food cannot be the cause of this lymphocytosis, because the Europeans, using food comparatively poor in this class, show the highest average (as do also those recently arrived from temperate climates). The authors are inclined consequently to consider these high figures as normal.

The great variability of the percentage of lymphocytes makes it difficult to use this figure for diagnostic purposes, unless the normal figures are known in every instance. The total number of leucocytes is more constant, varying around 8,000. 10,000 being still within the limits of the normal, higher figures rarely so. The same holds for the percentage of the neutrophile leucocytes with non-segmented (rod-shaped) nuclei, which is usually about 5–6 per cent. As to the eosinophile leucocytes, here only a marked difference between Europeans (average 3·4 per cent.) and natives (average 7·7·3 per cent.) becomes apparent, which may be explained by the frequency of helminthic infections (although treated regularly), perhaps also of skin diseases.

N. H. Swellengrebel.

Grijns (G. W.). Resultaten, verkregen met de bepaling der bezinkingssnelheid van erythrocyten. [**Results obtained by Determination of the Sedimentation Speed of Erythrocytes.**]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1925. Vol. 65. No. 4. pp. 501–510. [9 refs.]

Grijns applied Westergren's method; he made 450 tests. Though the results were not very striking, he ventures to draw the following conclusions:—

(1) Patients with high fever and slow sedimentation speed of the red blood cells are acute malarial patients (provided that no quinine has been administered previously).

(2) Hookworm anaemias cause only a slight increase of the sedimentation speed.

(3) A markedly increased sedimentation speed probably does not occur in healthy people.

(4) It is recommended that the determination of the sedimentation speed be asked for in the questionnaire of life insurance offices.

W. J. Bais.

Adler (S.) **Autoerythro-Phagocytosis.**—*Harefuah.* Jerusalem. 1925. Apr. Vol. 1. No. 4–5. English summary p. VII. [In Yiddish p. 189.]

The author has observed auto-erythrophagocytosis in a fatal case of Theileria infection and in infections of Anaplasma in cattle, in a disease of fowls, and in a section of a Jericho boil; but he has failed to elicit the phenomenon experimentally by producing artificial haemolysis in the healthy rabbit. He therefore concludes that the phenomenon—assuming it to be dependent on haemolysis—requires the mediation of a toxin of some sort.

A. A.

Sitsen (A. E.). Over klepvliesgebreken van het hart in Indië. **Valvular Diseases of the Heart in Netherlands India.**—*Nederl. Tijdschr. v. Geneesk.* 1925. July 11. 69th Year. 2nd Half. No. 2. pp. 222–233. [15 refs.]

The occurrence of endocarditis has long been known in N.I., but in the Army records it is rare: 0·17–0·23 per cent. among European, 0·11–0·18 per cent. among native troops. Among post-mortem examinations from various parts of the Archipelago the incidence varies from 1 : 15 to 1 : 160. Among 2,168 post-mortem examinations by the author in Soerabaia (mostly adult natives), 19 cases were noted and are described separately. (As a comparison Clawson's figures from Minnesota are cited with 220 endocarditis in 3,890 post-mortems.) Of these 19 cases, 3 were of syphilitic nature; *Streptococcus haemolyticus* was found twice; but the etiology of the others could not be made out with a sufficient degree of certainty, though it is probable that *Diplococcus pneumoniae* plays an important part.

N. H. Swellengrebel.

Basu (Uma Prasanna). **Preliminary Observations on Acquired Diseases of the Heart and Aorta as met with in Bengal.**—*Indian Med. Gaz.* 1925. July. Vol. 60. No. 7. pp. 307–310. [10 refs.]

Disorders of the heart among the people of Bengal are due to the myocarditis from which, according to this author, the majority of Bengalis

suffer. The author attributes the myocarditis primarily to constant heart-strain in the effort to counteract the vasodilation which is the natural effect of the Bengal climate, and, as contributory causes, to the poor diet of a poverty-stricken people and the prevalence of debilitating diseases like malaria, kala-azar, dysentery, and cholera.

A. A.

Knipping (H. W.). Beitrag zur Wärmebilanz des Tropenbewohners. [**Heat Balance Sheet of the Tropical Resident.**]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Aug. 1. Vol. 29. No. 8. pp. 357–368. [19 refs.]

The author re-states his previous conclusions that Europeans after long sojourn in the tropics exhibit a reduced basal metabolism which cannot be explained by muscular wasting. This, though disputed by some workers, has been confirmed by O. de Almeida, who has pointed out that these differences may be explained in part by errors in the method used (the Zuntz-Geppert apparatus). This is not only of theoretical interest but is of practical importance in relation to the question of heat-regulation; the balance between heat-production and heat-loss is perfectly preserved in health, though naturally upset in infectious conditions and in disorders peculiar to the tropics such as heat-stroke. The calorie output for the same work is in Europeans in the tropics greater than that of the coloured natives, but these differences in exercises such as sport are lessened by training. The part played by skin-pigment and sweating on exposure to sun radiation are factors which are briefly discussed. In malarial and similar infections the conditions are more complex, but the European races show greater thermolability and slower recovery. The questions of difference in habit (sport) and diet (alcohol) also come in and the varying views of different writers (with references) are alluded to, as well as personal idiosyncrasies. The article is mainly a discussion of differing views, and nothing in the nature of new facts seems to be forthcoming.

W. D. Halliburton.

Pfeiffer (Ernst). Studien ueber die Wärmeregulation bei Heizern auf Tropenschiffen. [**Heat Regulation in Firemen on Ships in the Tropics.**]—*Beihefte z. Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Vol. 29. No. 1. pp. 273–283. [15 refs.]

The author's interest in the well-being of the sailors on ships in tropical seas dates from 1923, when he served as a young medical officer on one of the British Indian ships; since then he has worked at the subject of heat-stroke and other maladies produced by subjection to high temperatures, and he concludes the present paper with some recommendations for the amelioration of the lot of such workers. The main conclusion he arrives at is that what is most needed is an efficient system of ventilation, with increased cubic space per head. So far as diet is concerned he advises reduction of protein food with increase in the carbohydrate supply, the amount of water supplied to be liberal, though this will largely depend on the diet; alcohol he deprecates. Whether such employés should be State servants, as he advocates, is a domestic concern of the Germans. Among other points he alludes to the influence of accommodation, the result of training, and the differences in metabolism of the black and white races, which he does not attempt to explain. The different views on the causes of such differences he is

content merely to mention ; his conclusion that darker peoples are more suitable for work in the tropics will probably meet with acceptance, and is consonant with common sense, though the physiological reasons why may be difficult to state definitely.

W. D. Halliburton.

Fleming (Wm. D.). **The Basal Metabolism of a Normal Young Man as affected by a Tropical Residence of One Year.**—*Amer. Jl. Trop. Med.* 1925. July. Vol. 5. No. 4. pp. 283–290. [4 refs.]

The subject of these experimental observations is a private in the medical corps of the U.S. Army, well known to the experimenter and well accustomed to laboratory employments both active and passive. His medical history, his family history, and his habits are described, as also is the technique of the experimentation in which he co-operated. The experiments were done in the hot season, at Manila, in May 1923 and June 1924. Their results are tabulated and are thus summarized:—

"Basal metabolic rates, respiratory quotients, and other metabolism for a normal white male 22 years old, seven months after arrival in the tropics, and again after a thirteen-months' interval. For the first series the basal metabolic rate averaged 3 per cent. *minus*, for the second series 7 per cent. *minus*."

A. A.

Chopra (R. N.) & Bose (J. P.). *Cephalandra indica* (**Telakucha**) **in Diabetes.**—*Indian Jl. Med. Res.* 1925. July. Vol. 13. No. 1. pp. 11–16. [3 refs.]

Cephalandra indica (Sansk. *vimba*, *tundkeri*, *tundika* ; Hind. *kunderi*, Beng. *telakucha*), a creeping Cucurbitaceous herb that grows abundantly in a wild state in most parts of India, is reputed in Bengal to have a remarkable effect in reducing the amount of sugar in the urine of diabetics and has been used (fresh juice of leaves and tubers) for that purpose by Ayurvedists. The authors have had the fresh juice analysed and have tested the enzyme, the hormone, and the traces of an alkaloid which it is found to contain. The enzyme has amylolytic properties, but when administered subcutaneously to rabbits none of these substances reduces sugar, and the fresh juice causes no reduction of sugar in the blood or urine of patients suffering from glycosuria.

A. A.

Chopra (R. N.) & Ghosh (Sudhamoy). **A Preliminary Note on the Pharmacology and Therapeutics of** *Adhatoda vasica* (**Basak**).—*Indian Med. Gaz.* 1925. Aug. Vol. 60. No. 8. pp. 354–355. [4 refs.]

—— & ——. **Some Observations on the Pharmacological Action and Therapeutic Properties of** *Adhatoda vasica* (**Basak**) **(Indigenous Drug Series No. 6.)**—*Indian Jl. Med. Res.* 1925. Oct. Vol. 13. No. 2. pp. 205–212. With 2 charts. [2 refs.]

Adhatoda vasica is a small evergreen bush of the N.O. Acanthaceae, which grows all over the plains of India and is extensively used as a remedy for colds, bronchitis and asthma. The authors found in it two principles, an alkaloid "vasicine" and a volatile principle, the first of

which had no marked action. A fluid extract prepared from the leaves had decided expectorant properties and relieved bronchial spasm; it had no effect whatever in pulmonary tuberculosis.

A. G. B.

Anderson (G. V. W.). **Case of "Belladonna Poisoning" by the Seeds of *Datura Conigera*.**—*Kenya Med. Jl.* 1925. Oct. Vol. 2. No. 7. p. 213.

The symptoms, in a European child of five years, with no history that would lead to a diagnosis of poisoning, were vomiting followed by delirium, face scarlet, pupils dilated and fixed, mouth dry and speech hoarse, muscles tremulous, movements jerky, "typical aspect of acute delirium tremens in adults," pulse 110. Atropin poisoning was diagnosed. It was ascertained next day that the child had eaten part of a seed pod of *Datura conigera*.

A. G. B.

Martin (S. H.). **Five Cases of Atriplicism.**—*China Med. Jl.* 1925. Sept. Vol. 39. No. 9. pp. 808–809. With 2 text figs.

Five cases of poisoning by ingestion of *Atriplex serrata* (Chenopodiacae) are recorded from Kirin, Manchuria, in one of which sloughs formed on both hands. The symptoms do not differ from the text-book descriptions. The facial oedema is illustrated.

A. G. B.

Rigollet. Les méningites épidémiques en Afrique occidentale française. [**Epidemic Meningitis in French West Africa.**]—*Ann. de Méd et de Pharm. Colon.* 1925. May–June–July–Aug. Vol. 23. No. 2. pp. 279–289. [1 ref.]

Epidemic meningitis was identified in French West Africa (Senegal) for the first time in 1899 by Marchoux, but it had long been known to the natives. It takes different forms in different regions. Thus, in epidemics seen to the west of the Upper Niger it appears in the cold season, fastens on a village or group of villages, causing a mortality of about 1 per cent., and after some weeks, dies down; but in the bend of the Niger, and to the east of that river, it is much more infectious, and is comparable with influenza; the morbidity is greater, and the death roll may reach 10 or 15 per cent. In 4 years the Niger Colony has been the scene of meningitic outbreaks, interrupted at the rainy seasons, causing some 15,000 victims; whereas in the same period in the upper Volta and Dahomey, the other side of the river, cases have been few.

There are two microbic agents, the pneumococcus and the meningococcus, and it is not possible to say which is the more important. In hospitals the meningococcus has the pre-eminence, but pneumonia is often present as well in these epidemics, which suggests that the pneumococcus is the cause of the meningitis also. Though the disease is not unknown in the warm, humid, coastal zones, the epidemic forms are almost entirely confined to the regions and the season where the fall of temperature is such as to produce chill. Cold, and dust raised by the dry wind of the cold season are important factors. A striking picture is given of the unhygienic conditions obtaining in a Lobi hut where at last even the tolerant inhabitant is driven out by

the filth. Everything here favours spread. The means of checking these epidemics are discussed; they include the immobilization of the population attacked, isolation, naso-pharyngeal disinfection of contacts, incineration of huts or, failing that, the removal of the roofs, and the exposure to sun of the interior and the patient's property. Some illustrative case histories are given.

A. G. B.

Boletim Geral de Medicina e Farmacia. (Supplemento.) 1924. 9th Ser. cxviii pp.—Numero Especial Referente a' Epidemia de Meningite do Concelho de Salcete. [**Meningitis in the Salcete District.**] [Pinto (Wiseman); de Mello (Froilano); Lobo (Gelásio J.)]

Amongst the cases on which this account is based there were certainly some instances of cerebrospinal fever, for the meningococcus was seen in the spinal fluid of six of them, but the recorded evidence that all, or even the majority, were cases of this disease is far from convincing. It is stated that 60 per cent. of the houses in one district suffered, that the majority of the patients got well spontaneously in 24–48 hours, or more rarely in 3 days; that fever was absent or very slight (99°–100°); while a few proved rapidly fatal in 2–3 days, but exhibited no rise of temperature. Most cases were very mild and probably many were unrecognized and unnotified. Besides the practical absence of fever other symptoms common in cerebrospinal fever were equally wanting. Thus, headache was anything but a marked feature, there being usually merely a "sense of weight"; spinal pain was very rare; Kernig's and Brudzinski's signs were not elicited; neither herpes nor purpuric rashes were seen; the spinal fluid when withdrawn was not purulent. So much for negative evidence. On the other hand, certain symptoms were found which are not usual in epidemic meningitis, such as a feeling of constriction and burning in the chest; general anaesthesia in severe cases; the presence of risus sardonicus; enlargement and tenderness of the liver.

Permission for autopsies was apparently difficult to obtain. Accounts of three only are given, and two of these were performed in the cemetery late at night by candle-light, so that one author states: "We were more like conspirators than pathologists." Post-mortem findings cannot be very dependable when work is done under such conditions, especially if some hours have elapsed since death took place.

H. Harold Scott.

Heinemann (H.). Einige Fragen der praktischen Syphilis und Tuberkulosediagnostik im tropischen Lande. (Zugleich 3. Mitteilung der Liquoruntersuchungen.) [**Practical Questions of Diagnosis of Syphilis and Tuberculosis in the Tropics. The Cerebrospinal Fluid.**]—*Arch. f. Schiffs- u. Trop.-Hyg.* 1925. July 1. Vol. 29. No. 7. pp. 316–334. With 7 charts. [8 refs.]

Schüffner and Kuenen, reporting in 1909 on the health of the Senembah Plantations Company on the east coast of Sumatra, stated that the mortality per 10,000 had fallen from 600 in 1897 to 95 in 1908; in 1923 it fell further to 54. A table gives the figures for Chinese and for Javanese men and women for these and the intervening years. What were formerly described as the special diseases of the coolie—

cholera, dysentery, beriberi and ankylostomiasis—have now little influence on the mortality curve. The same is the case with malaria, plague, smallpox and rabies; the diseases causing the highest mortality are pneumonia, nearly 24 per cent. of deaths, and tuberculosis 11 per cent. The figures are influenced by the fact that the physically weaker coolies do not sign on for a second term, and the author, searching the hospital records between 1905 and 1923, finds that the chief medical cause of such invaliding was tuberculosis, which is recorded in no less than 25 per cent. of the cases, another 15 per cent. being due to leprosy. Tuberculosis, therefore, is a very serious cause of death and invalidity.

Syphilis also is of importance, though it figures little in the returns, especially syphilis of the organs of circulation, lung, liver and central nervous system. For the detection of cerebrospinal syphilis examination of the C.S.F. is essential, and here the author notes that lumbar puncture is well borne by the coolies [*cf.* this *Bulletin*, Vol. 21, p. 924]. While the absence of change in the fluid does not negative a diagnosis of syphilis a positive C.S.F. Wassermann is demonstrative. The significance of the blood Wassermann is perplexed by the frequence of latent yaws among the Javanese and by malaria, the influence of which is seen in a series of curves, which show that the Wassermann is frequently positive during the fever or other manifestations, and becomes negative after. A series of tables give the author's Wassermann results in syphilis, yaws and malaria. Of 33 coolies discharged owing to cerebrospinal syphilis, 23 were Chinese and 10 Javanese, though the Javanese are the more numerous; neither tabes nor general paralysis has ever been seen in Javanese. In spite of sources of error the author considers the blood Wassermann to be of great importance, especially in Javanese coolies. He has found that chronic pneumonia is frequently the result of syphilis, and recovery cannot take place without antisyphilitic treatment. Syphilitic anaemia is not infrequent; the blood Wassermann is often negative and the spleen is slightly enlarged; antisyphilitic treatment cures the condition. In syphilitic aortitis the blood reaction is not always positive; here X-rays assist in diagnosis.

As to tuberculosis we need a reaction which detects only active disease. Reactions which have been devised for this purpose are discussed, and it is concluded X-rays give more information than all of them. Since he has made more use of them the author has diagnosed more cases of bone tuberculosis than before, and in lung tuberculosis information can be thus obtained not only of diagnostic value but helpful in prognosis.

A. G. B.

Remlinger (P.). Sur un virus herpétique d'origine marocaine. [**A Herpetic Virus from Morocco.**]—*Bull. Soc. Path. Exot.* 1925. Oct. 14. Vol. 18. No. 8. pp. 623–624.

With fluid drawn from the vesicles of a case of herpes at Tangiers the author inoculated the brain of a rabbit which showed symptoms on the 4th day and died on the 6th. Other rabbits were similarly inoculated in turn, and all succumbed in 6 days or less with typical herpetic encephalitis. The author is maintaining and studying the virus which, he says, differs in no respect from the herpetic virus of Europe.

A. G. B.

Affre. Un cas de tétanos ombilical guéri. [**Case of Recovery from Umbilical Tetanus.**] —*Bull. Soc. Path. Exot.* 1925. Oct. 14. Vol. 18. No. 8. p. 678.

This is the second case of recovery among the 100 cases treated at the Maternité, Dakar. The child was brought 12 days after birth, and had been ill with anorexia 5 days. For 33 days it received daily 10 cc. of antitetanic serum and a little atropin. The author considers that the usual cause of death is starvation because the infant is unable to suck. This patient was fed with a spoon.

A. G. B.

Steudel (E.). Malaria und Tuberkulose. [**Malaria and Tuberculosis.**] —*Beihefte z. Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Vol. 29. No. 1. pp. 391–393. [3 refs.]

The author believes that malaria furthers tuberculosis. Though affections of the respiratory ways are much rarer in Europeans in the tropics than in temperate climates, it is notorious that when they have commencing lung changes the advance is rapid. The change for the worse is due to malaria, and he recalls cases of tuberculosis in ex-German East Africa in which malaria was escaped and the lung lesions healed soundly. Another experience is of the War. In 1915–16 he was in medical charge of the 25th Corps on the eastern front, and since this front was relatively peaceful the regular troops were replaced by a Landsturm battalion, which contained a number of men who had suffered from tuberculosis. Life in the open air and regular food suited them well till, in 1916, malaria appeared, upon which the old tubercular cases relapsed with pleurisy and catarrhal symptoms, from which the rest remained free. Unfortunately he is not able to report on the outcome. He refers also to the statement of Dr. Atkey (Further Report on Tuberculosis and Sleeping Sickness in Equatorial Africa. League of Nations) that in the Sudan malaria predisposes to tuberculosis, and that measures undertaken against malaria have a favourable effect on the occurrence of the other disease. Steudel considers it not improbable that the malaria parasites produce blood changes which, possibly by destruction of antibodies of tuberculosis, directly favour that disease.

A. G. B.

Dunlap (A. M.). **Peanut Bronchitis in China; with the Report of a Case.**—*China Med. Jl.* 1925. Oct. Vol. 39. No. 10. pp. 903–910. With 1 chart in text. [4 refs.]

This form of bronchitis was described in 1919 by Patterson in U.S.A. It is due to the inhalation of fragments of peanut and seems to have increased in prevalence with the substitution in the War of ground nuts for meat. Here we have an account of it in China. According to Jackson (1914) peanuts are among the more fatal of foreign bodies in the air passages, owing to "the peculiar irritating effect of the peanut kernel upon the trachea-bronchial mucosa." This is said to be due to arachidic acid, "a saturated fatty acid which is present in about 5 per cent. strength in peanut oil." The symptoms resemble those of laryngeal diphtheria—asthmatic cough, toxaemia, fever; the physical signs are those of diffuse bronchitis with accentuation over the site of the foreign body. The patients are usually children under 7, and there is a history of peanut consumption, and

possibly of choking. Unless the foreign body is removed there is grave danger of death. A long account is given of a case in a Chinese boy of 5 years, from whom a piece of peanut 1 × 0·8 cm. in size was removed by bronchoscopy after tracheotomy had failed to relieve the symptoms. JACKSON says that "peanut thresher's fever" is well-recognized where peanuts are grown.

A. G. B.

NEDERLANDSCH TIJDSCHRIFT VOOR GENEESKUNDE. 1925. Year 69. 2nd Half. No. 9. pp. 1079–1084.—Nederlandsche Vereeniging voor Tropische Geneeskunde. Vergadering op Zondag 10 Mei 1925. [**Dutch Society for Tropical Medicine. Meeting on Sunday, May 10th, 1925.**]

SNYDERS discusses the geographical distribution of rhinoscleroma, which is found not only in Europe but also in North and Central America, Brazil, North Africa and Bengal. He records 3 cases observed in Sumatra, 2 diagnosed by the pathological anatomical structure of the tissue (plasma cells, hyaline globules, Mikulicz-cells and capsule-enveloped bacteria), one also by the culture of the bacilli of FRISCH. He is of PALTAUF'S and MARSCHALKO'S opinion that the Mikulicz-cells are degenerated macrophages derived from the endothelium or connective tissue. FRISCH'S bacillus is not stained by Gram's method. Its pathogenicity and fermenting property is very small, compared with the other capsule-bearing bacilli of the same group, and the capsules in old cultures are much more distinct.

ELDERS has observed two cases of fever with a measles-like rash, leaving the face untouched (without preceding coryza, conjunctivitis or lymphadenitis) after the use of 250 mgm. stovarsol thrice a day.

N. H. Swellengrebel.

SNIJDERS (E. P.). Ueber einen tropischen Rhinoskleromherd auf Sumatra. **A Focus of Rhinoscleroma in Sumatra.** —*Beihefte z. Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Vol. 29. No. 1. pp. 360–369. With 22 figs. on 4 plates. [26 refs.]

The author charts the geographical distribution of the disease, which seems to occur in well-defined foci. In Europe the chief is in the east—Poland, Chekoslovakia, etc., where some 480 cases have been reported; smaller foci occur in Italy and Switzerland. In the tropics it is found in Central America, between Mexico and Colombia, at least 50 cases described; in Brazil, 8 cases; in Egypt, an unstated number of cases described since 1886 (see MADDEN, in BYAM and ARCHIBALD'S "Practice of Medicine in the Tropics"); in Calcutta, 11 cases described; and now in Sumatra 4 cases. The face is characteristically changed in the later stages, leading to a tapir or hippopotamus-like appearance. The author compares the disease to venereal granuloma, and states that KABELIK has treated it with tartar emetic intravenously with success. Details are given of the microscopical characters.

A. G. B.

FRONVILLE. La rachi-anesthesie. Son application chez le noir. **Spinal Anaesthesia in the Black Man.** *Bull. Méd. du Katanga.* 1925. June. Vol. 2. No. 3. pp. 116–118.

At Elizabethville spinal anaesthesia is now systematically employed in operations below the level of the navel, and the author, who is an

advocate of the method, writes from experience of more than 300 cases. Serious accidents may occur, due to hypotension; therefore, this method is interdicted in cases complicated by shock, cachexia, or anaemia, and in acute stages of disease. Slight accidents due to hypotension are relieved by intravenous aqueous injections. One of the very earliest accidents at Elizabethville was the sudden death, two minutes after the injection of 6 cgm. of stovaine, of a patient suffering from a crushed leg and much loss of blood. Two deaths occurred, 2 days after operation, in two long-standing cachectic cases—one of gangrene of the foot, the other of osteitis of the entire tibia. A pneumonia lasting 2 or 3 days supervened in 3 or 4 cases. Paralysis of the bladder (which twice persisted for 5 days) happened in 12 cases, and is best relieved by manual pressure upon the bladder, since in one case that was catheterized the patient finally succumbed with cystitis and suppurative nephritis. A transitory intestinal paralysis occurred in 5 or 6 cases, causing a general and alarming inflation of the abdomen —particularly after injections of stovain. Vomiting and a tendency to syncope are sometimes observed at the commencement of anaesthesia; and civilized negroes sometimes complain of headache for a few days after operation. Fever up to 100° or 101° F., and lasting 2 days, is a very common occurrence; it is not due to kindling of a latent malaria.

In one case intra-rachitic injection did not take effect; in a few other cases it was insufficient, and had to be superseded by a general anaesthetic.

A. A.

Anthony (R. W.). **Certain Aspects of Litholapaxy.**—*Indian Med. Gaz.* 1925. July. Vol. 60. No. 7. pp. 311–312.

The author has done over 2,500 litholapaxies, mostly at Hyderabad in Sinde, where it has been the custom to allow the patient—as he prefers, if there are no complications—to go home when he has recovered from the anaesthetic. This paper deals merely with certain minor facilitations of the operation of litholapaxy.

In boys, after the bladder has been filled for operation reflux can be obviated by a rubber band round the base of the penis. In boys, too, the working of a lithotrite is often facilitated by preliminary distension of the urethra by graduated metal bougies. And in boys an evacuator is not necessary; the bladder can be repeatedly washed out through a large cannula and with simple manual pressure.

The author never rotates the beak of a lithotrite in the bladder. If the lithotrite will not lock on a stone smart (and infinitely cautious) taps on the head of the instrument with a hammer will make an impression on anything but a large mulberry. Nowadays the author does suprapubic litholapaxy in about 1 per cent., and perineal litholapaxy in about 2 per cent. of cases.

A. A.

Bhatia (S. L.) & Coelho (G.). **Some Observations on Normal Sugar-Content of Blood and the Sugar Tolerance Test.**—*Indian Jl. Med. Res.* 1925. July. Vol. 13. No. 1. pp. 41–51. [12 refs.]

These observations record the results of a series of experiments carried out to determine the normal sugar-content of the blood and

normal sugar-tolerance of Indians living (*a*) on a purely vegetarian, and (*b*) on a mixed diet. (The vegetarian diet includes milk and its products, and the mixed diet of Indians is bulky in carbohydrates.) The subjects of experiment consisted of 18 "vegetarians" and 20 "non-vegetarians." The order and technical methods of the experiments are fully and carefully described, as also are details of results.

The results show a marked difference between vegetarians and non-vegetarians. In vegetarians sugar-tolerance is lower, the blood-sugar level is higher initially, and after ingestion of sugar it reaches a higher level and readily passes beyond the renal threshold for sugar, so that glycuresis is common. It is argued from these results that since the normal person does not possess complete tolerance for carbohydrates, as was hitherto believed, the individual who subsists on a diet over-rich in carbohydrates is dangerously near the boundary-line of diabetes. The observations help to account for the frequency of glycosuria in India. Vegetarians, like herbivorous animals such as rabbits, seem to be specially susceptible to extreme variations in the amount of blood-sugar, and in vegetarians, as in the rabbit, sudden emotional disturbances tend to cause hyperglycaemia and consequent glycuresis. The authors attribute the diminished sugar-tolerance of vegetarians to two possible causes—deficiency of the function of the liver and overstrain and exhaustion of the islands of Langerhans—acting separately or conjointly.

A. A.

Brahmachari (Upendra Nath) & Sen (Parimal Bikash). **Researches on Blood-Sugar in Indians. Part I. Blood-Sugar Observations in Young People of Bengal.**—*Indian Jl. Med. Res.* 1925. Oct. Vol. 13. No. 2. pp. 271–274.

Diabetes being common in Bengal, observations on sugar tolerance were made on unselected students (*aet.* 19–26), with the result that defective tolerance is found in many, and there is a wider variation (0·075–0·135 per cent.) in initial sugar content of the blood after 10 hours inanition, than in Europeans. Maclean's method was used. Among 47 cases, only one showed a return to the original level, 1 hour after taking 50 gm. of sugar, 29 in 1½ hours, and 12 in 2 hours. Five were deficient in sugar tolerance, *i.e.*, 10 per cent. were potentially diabetic. Of the 47, 8 were vegetarians (1 potential diabetic); the remaining 39 were on a mixed diet (4 potential diabetics). Observations on "Kidney threshold" were limited in number (15). Out of 7 cases in which the blood-sugar rose above 0·18 per cent. no sugar was detected in the urine in one.

W. D. Halliburton.

Hughes (T. A.). **Effects of Quinine on the Sugar of the Blood.**—*Indian Jl. Med. Res.* 1925. Oct. Vol. 13. No. 2. pp. 321–336. [22 refs.]

Quinine is glycogenolytic in rabbits and leads to hyperglycaemia. The part played by the adrenal in the process seems uncertain; therefore certain drugs known to affect that gland were used in these observations on rabbits and men; in rabbits insulin produces the same effect on quinine hyperglycaemia as on adrenaline hyperglycaemia. Ergotoxine and to a less degree pituitrin also inhibit quinine glycogenesis. Quinine in antimalarial doses usually lowers the blood sugar in man, and this

is antagonized by pituitrin. The fall so produced may give rise to mild symptoms of hypoglycaemia, which may be prevented by a carbohydrate meal 30–60 minutes before the drug is taken.

W. D. Halliburton.

Beven (J. O.). **A Case of Hypernephroma.**—*Kenya Med. Jl.* 1925. July. Vol. 2. No. 4. p. 120.

The patient, a Jaluo boy of 14, came much emaciated, with a much distended belly, and a story of 3 months' fever. The distension was on the left side and exactly simulated an enlarged spleen, and as benign tertian gametocytes were found in considerable number the case was diagnosed as "advanced malarial cachexia with splenitis." As he died three weeks after admission, in spite of treatment and good diet, a post-mortem examination was made, and the entire left half of the abdomen was found filled by an enormous tumour which, though its shape and surface relations exactly resembled a greatly enlarged spleen, "involved the liver, diaphragm, stomach, pancreas, spleen, all three parts of the small intestine, the transverse and descending colon, bladder, rectum, and left kidney." The author believes the tumour to have been a hypernephroma: it was removed *en bloc* and placed in formalin, but in the author's absence it was condemned, and had to be disposed of without further examination.

A. A.

Nicolle (Pierre). Méthode pour l'étude expérimentale des antithermiques. Essai pharmacodynamique. [**Method for the Experimental Study of Antipyretics: Pharmacodynamic Trial.**]—*Arch. Inst. Pasteur de Tunis.* 1925. July. Vol. 14. No. 3. pp. 325–330. With 4 charts in text.

After discussing various means of producing in laboratory animals a phase of hyperthermia so constant in all its measurements as to afford a standard for the comparative study of the effect of different antipyretics, the author describes a method of producing in the rabbit a fever-curve having the necessary constancy. This method consists in the intravenous injection of a definite quantity of a maceration (filtered and sterilized) of brewers' yeast. In the experiments here briefly described the intravenous injection of 10 cc. of this yeast filtrate constantly produced in the rabbit a rise of temperature lasting 7 hours and attaining a maximum, in 3½ hours, of 2·3° above the norm. Experiments are also described showing the effects upon this standard curve of the supervention of given quantities, respectively, of antipyrin, phenacetin, and a new unspecified antipyretic preparation. [The results, as regards the known drugs, are in harmony with general experience.]

A. A.

Jarland. L'opium au Yunnan, ses conséquences sociales. [**Social Results of Opium Smoking in Yunnan.**]—*Ann. de Méd. et de Pharm. Colon.* 1925. Jan.–Feb.–Mar.–Apr. Vol. 23. No. 1. pp. 54–65.

We have here a perfectly hideous picture—almost as horrible as the young Claudio's vision of death—of the opium-smokers of the opium-growing Chinese Province of Yunnan. The author classifies his horrors. First the opium-smokers of the ruling class, of whom it is said that, but for a brief repast and an hour of work, their waking-hours "are devoted to smoking, with interludes of gambling and chambering." The younger members of this upper class take, perhaps, 7 to 12 pipes

a day, and are merely more expansive and loquacious and visionary and impulsive than is generally natural to youth. In middle age, when they come to 15 to 40 pipes a day, they are more visionary, loquacious to the verge of inarticulation, and in thought and judgment are perfect monsters of cynical inhumanity. In old age (over 40 years) they get to 40 to 100 pipes a day: their nerve-centres are now "staked away to torpor"; the sensible warm motion has become a mere parchment shape, with a face of yellow wax. The smokers of the middle classes are for the most part dealers in opium and therefore have to keep their wits about them; they have less leisure for smoking and seldom come to the last stage of utter wreck. The lower classes take their opium in immoderate doses, for the sake of temporary excitement, and under its influence they become morbidly cruel and merciless.

The author sums up the opium-smoker as a pariah to be banned by society and deprived of all authority over sentient creatures. As regards remedies: in the statement that the one and only commodity that Yunnan produces for the world's markets is opium, the author gives us an extreme and desperate instance of an old and familiar obstacle in the reformer's path.

A. A.

Destéfano (Francisco) & Vaccarezza (Raúl F.). Tratamiento de la poradenitis inguinal por las sales de antimonio. **Treatment of Inguinal "Poradenitis" by Salts of Antimony.** —*Semana Médica.* 1925. Oct. 22. Vol. 32. No. 43 (1658). pp. 1013–1052. With 5 charts in text. [12 refs.]

The first part of this article is occupied by a brief review of the various forms of treatment of inguinal adenitis (climatic venereal bubo), surgical by excision, medicinal by mercurial salts, iodide of potassium, iron, arsenic, emetine and other preparations, and physical by radiotherapy. The authors then give an account of a method they have employed in 72 cases, the intravenous injection of antimony. 38 were in the indurative stage, 28 suppurating, and 6 fistulous. A 1 per cent. solution of tartar emetic in saline was used; the first injection was 5 cc., two or three days later 8 cc., and thereafter 10 cc. every three or four days. Of those in the stage of induration 27 were cured in periods varying between a week and a month, 9 ceased treatment when nearly well, one left after 5 days, and one was still attending. Of the 28 in the suppurating condition in 15 the glands completely receded, 4 did not go through a complete course; in the remaining 9 the abscess opened spontaneously or was opened surgically. Six cases had fistulae; three of these were cured in approximately 2 months, the other three had made great improvement when they ceased to attend.

In the majority of cases 4–8 injections were required: some had 15, only six needing more than this. The only contra-indication to the use of the drug is, according to the authors, renal mischief, especially acute parenchymatous nephritis. The last portion of the paper is given up to a description of each of the 72 cases.

H. Harold Scott.

Capper (A.). **An Epitome of the History of Syphilis.** —*Arch. Dermat. & Syph.* 1925. Vol. 12. No. 4. pp. 509–519. [5 refs.]

The question whether syphilis existed in the Old World prior to the latter part of the 15th century has again been examined by the

author, who concludes that the weight of evidence seems to favour the view that syphilis was previously unknown in the Old World, except perhaps in Eastern Asia. In ancient Egyptian remains Lortet and Caillard have reported lesions of syphilis (irregular erosions in the outer table of the frontal and parietal bones), but against this solitary finding is the failure of Ruffer and Moodie to find any evidence of syphilis in mummies of the period 1580 B.C. to 520 B.C., and from 500 B.C. The evidence from China is contained in Gardy's "Medicine of the Chinese," a compilation of Chinese medical works dating back to 1700 B.C. The descriptions of lesions in this work "are so perfect that no doubt is left in one's mind after reading these that they were of a syphilitic nature." Turnbull discards the evidence that the boils of Job and the nocturnal bone pains of David were syphilitic on the grounds that David was a poet and spoke allegorically, and that Josephus makes no mention of the disease. As to the Romans, Celsius, Aeretius & Aetius have described lesions which read like chancres, secondary syphilitic lesions and tertiary manifestations including profound pains in the bones. Turning to America, we at once get evidence, in prehistoric bones, of the existence of syphilis in the New World long before the time of Colombus. Bruehl says that the Mexicans understood syphilis so well that they were able to instruct the Spaniards in its management. The author is rather opposed to the argument that syphilis was imported into Europe by the crew of Christopher Columbus's vessel. These 82 sailors, with nine Indians, landed at Palos, Portugal on March 13th, 1493. They remained in their country until 1495. The crews of the remaining vessels of the Columbus expedition, under Pinzen, landed at Bayonne in March, 1493. Roy Diaz de Lala states that he treated some of Columbus's crew for syphilis on the voyage home. The great outbreak of syphilis in Europe is commonly believed to have started at Naples in the army of Charles VIII of France, who entered this city on February 21st, 1594. Capper thinks it hardly conceivable that so few men as those constituting the crews of Columbus's vessel could have originated such a wide-spread epidemic. [As to this, the reader will probably agree that disease starting from even so few as 91 men could spread very rapidly on a virgin soil, and it is inconceivable that, if the men of Columbus's vessel were infected, Pinzen's crews had escaped.] There is the statement of Fulgose that syphilis prevailed sporadically in 1492, and Sprengel said that in the beginning of the summer of 1493 the new disease was in Auvergne and in Lombardy. A little later it was manifest in Halle, Brunswick and Mecklenburg. The author can hardly believe that, considering the slowness of travel in those days, the disease could have reached all these places so quickly from such a small focus as the Columbus expeditioners.

L. W. Harrison.

Kimura (Hiroshi). **On the Treatments of Elephantiasis.**—*Japan Med World.* 1925. Aug. 15. Vol. 5. No. 8. pp. 201–211. With 12 text figs. [47 refs.]

A somewhat lengthy paper in which the author reviews the various forms of treatment, operative and non-operative, hitherto devised and practised for the relief of elephantiasis, and advances a new method of securing lymphatic drainage and consequent amelioration of symptoms.

In agreement with other observers he regards non-operative treatment as invariably unsatisfactory, but holds elastic bandaging to be useful both before operation as a preparatory measure, and after operation as an aid to the prevention of recurrence. Lymphangioplasty and other operative procedures entailing the insertion of foreign bodies in the tissues are rightly condemned as affording at the best a period of only temporary relief, limited usually to the duration of the patient's confinement to bed. Of the different methods aiming at drainage of the affected parts by the establishment of free communication with the deeper lymphatics KONDOLEON'S is recognized as more or less effective.

The new surgical departure which the writer brings to notice consists in the fashioning of pedunculated skin and subcutaneous tissue flaps from adjoining normal structures, and their plantation in the affected parts at spots where corresponding patches of elephantoid integument have been removed. For instance, in a case of elephantiasis of the lower extremity a flap is cut from the skin of the lower abdomen or buttock and planted in the thigh. When the leg alone is affected flaps from the lower part of the front or sides of the thigh are utilized. Similarly, in the case of the scrotum or penis, the healthy skin of the abdomen and front of the thighs is drawn upon. The author attempts to drain stagnated lymph into superficial tissues, whereas KONDOLEON'S aim is to drain it into deeper channels by removal of strips of fascia. In elephantiasis of the genitalia the new method plus some removal of tissue is held to give the best results. In the lower extremity a combination of these two procedures with KONDOLEON'S operation is recommended. Details are given of a series of cases which in nearly every instance tend to show a satisfactory degree of resultant improvement.

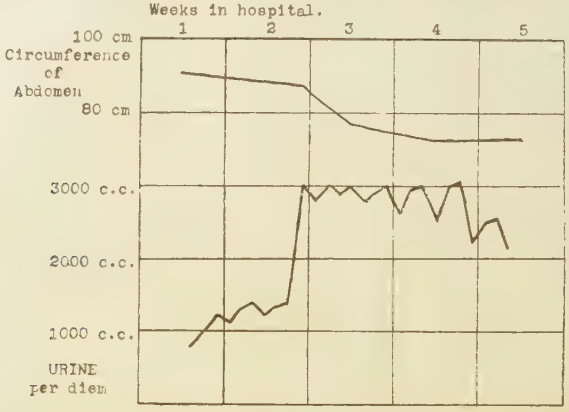
J. J. Pratt.

DAY (H. B.). **The Relation of Nephritis in Egypt to Intestinal Infection.** —*Lancet.* 1925. Oct. 24. pp. 860–864. With 5 charts in text. [7 refs.]

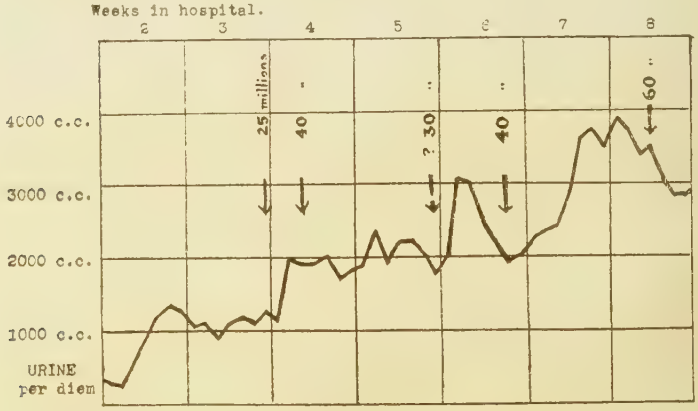
The author has analysed some 100 cases of nephritis with oedema admitted to the wards of the Kasr-el-Ainy Hospital, Cairo. He classes 34 as acute (abundant blood casts or cellular casts in the urine), 5 as syphilitic, and the remaining 61 as chronic. Of 27 acute cases no less than 20 had been incapacitated by definite illness for some time before the renal symptoms appeared, fever or diarrhoea or both, and in no instance could the fever be identified as scarlatina. In 55 per cent. of the acute cases there were definite signs of *Bilharzia mansoni* infection, a much higher proportion than in ordinary hospital patients, and 33 per cent. were infected with *B. haematobia*, but this incidence is too low to be significant; however, the frequent implication of the ureters undoubtedly disposes to renal infection. In the *B. mansoni* form the nephritis appears when the ova breach the intestinal mucosa. Ancylostomiasis was frequently associated with nephritis.

In the acute nephritic cases bacteriological examination of the catheter urine almost always gave positive results, and cultivation a pure growth of bacilli of intestinal types; coliform organisms from this source reproduced nephritis in a series of animals inoculated subcutaneously or by the peritoneum.

Cases were treated on the assumption that the nephritis resulted from an intestinal affection: some forms responded to emetine injections, others to treatment for ancylostomiasis, others again to vaccines (see charts). The dose of vaccines should be inversely proportional to



Case of ankylostomiasis complicated by nephritis with general oedema and ascites for four months. Anthelmintic treatment caused a gradual improvement with a sudden diuresis as soon as all the worms were expelled.



Case of prolonged dysentery with fever (due to *Bilharzia mansoni* infection) complicated with nephritis. On admission there was much oedema and oliguria. The chart shows some diuresis in the second week following the administration of urea. An autogenous vaccine was afterwards given by injection as indicated in the chart. Emetine was given during the third, fourth, and fifth weeks. The fever and dysentery declined in the sixth week. By the eighth week the albumin had decreased to a trace; the diuresis continued for another month.

[Reproduced by permission from the *Lancet*.]

the severity of the renal symptoms; correctness of dosage is important. In some chronic cases in which bacilli could not be found in the urine a stock vaccine was useful. [In the Philippines, Panama, and the West Indies nephritis is believed to be a not infrequent complication or sequel of malaria.]

A. G. B.

Panja (Ganapati). **A Case of Malignant Pustule.**—*Indian Med. Gaz.* 1925. Sept. Vol. 60. No. 9. p. 428. With 1 text fig.

A Mohammedan came to the out-patient department of the Calcutta School of Tropical Medicine with a localized swelling on the front of the left upper arm near the axilla, oval, 1½ inches long, consisting of several vesicles with a depressed central scab from which strings of swollen lymphatics radiated; he did not appear very ill. Cultures showed *B. anthracis*. The man had worked as a hide bearer. Anthrax, we are told, is rarely seen at Calcutta.

A. G. B.

Kharegab (R.). **Quinine in Pneumonia.** [Correspondence.]—*Lancet.* 1925. Sept. 19. p. 626.

The writer, who is Agency Surgeon at Wano, N.W.F. Province, has treated his pneumonia cases with intravenous injections of quinine bihydrochloride with benefit. As soon as the diagnosis is made 7 gr. are given in 10 cc. distilled water, and repeated on the 3rd and the 5th day. It does not shorten the course of the disease nor expedite the crisis. The mortality, however, among 92 cases was 6·5 per cent., and in another series (severe cases) 15 per cent., whereas in a series of cases not so treated it was 25 per cent. [The figures which form the basis of these percentages are not given.] There had been a high incidence of malaria in the summer, but parasites were not detected in blood smears from these patients; it is, however, stated that chronic malarials did less well than others.

A. G. B.

Lotti (C.) & Manai (A.). Ricerche sul favismo. [**Researches in Favism.**]—*Sperimentale.* 1925. Oct. 17. Vol. 79. No. 5. pp. 791–846. [30 refs.]

Favismus is the term applied to the symptoms produced by inhalation of the scent of the flowers or ingestion of the fresh fruits of certain leguminous cereals, and is a condition affecting 5·17 per mille of the inhabitants of Southern Italy and Sardinia in particular, terminating fatally in approximately 8 per cent. of cases with rapid respiration, tremors, convulsions and, perhaps, haemoglobinuria.

Several series of experiments were carried out with the dried flowers, the juice and other extracts to determine how these symptoms were brought about. Extracts of the dried plant injected intravenously into rabbits produced active haemolysis and haemoglobinuria and death in a few hours. The juice of the flowers led to death in convulsions, but without any haemoglobinuria. Fairly precise details are given of 62 experimental investigations performed.

The serum of patients already attacked by favismus, who give a positive cutireaction to antigens prepared from extracts of the plant, can passively convey the hypersensitiveness to rabbits, and the injection into these animals of the inactivated serum of patients with haemoglobinuria due to favismus will reproduce the same condition.

H. Harold Scott.

Weiss (Pedro). Puede asegurarse que existe un tipo blastomicósico de espundia? [**Is there a Blastomycotic Type of Espundia?**]—*Cronica Med.* Lima. 1925. May. Vol. 42. No. 743. pp. 144–148.

This brief article should, and probably will, lead to further discussion. The author notes that several diseases in tropical regions are associated with the presence of fungi and deplores the tendency to regard these on insufficient evidence as aetiological. This is his main thesis, and its particular application is made to leishmaniasis (espundia). The geographical distribution of blastomycosis and leishmaniasis in Peru is the same; Escomel's "clasmatocyte of blastomycoma," regarded by that author as diagnostic of blastomycosis, is probably nothing else than an ordinary plasma cell and common to many conditions. Further, all the symptoms believed to be diagnostic of blastomycosis have been observed by the author in cases of leishmaniasis, so that it is highly probable that a blastomycotic form of espundia is a true leishmania infection to which some fungus has gained access, and is not a separate entity.

H. Harold Scott.

Collier (Werner Adalbert) & Evers (Elsa). Untersuchungen ueber die Heil- und Schutzwirkung des Stovarsols bei experimenteller Kaninchensyphilis und bei Trypanosomeninfektion der Kaninchen. [**The Curative and Protective Action of Stovarsol in Experimental Syphilis and Trypanosomiasis of the Rabbit.**]—*Dermat. Ztschr.* 1925. May. Vol. 44. No. 1. pp. 1–16. [21 refs.]

In the authors' experiments on rabbits the preparation proved so toxic that even the seventh part of the dose recommended by Levaditi could not be borne by all the animals. To obtain cure of syphilis a dose close to the toxic had to be given. In intracutaneous infection with trypanosomes typical trypanosomal "chancres" developed in spite of the prophylactic injection of stovarsol, and with the ordinary method of introduction of the parasites the drug was equally useless in either prevention or cure. Fourneau's conclusion that stovarsol is of little value in trypanosomiasis was confirmed.

A. G. B.

Fronville (G.). Les occlusions intestinales. [**Intestinal Obstruction.**]—*Bull. Méd du Katanga.* 1925. Aug. Vol. 2. No. 4. pp. 156–160.

Cases of intestinal obstruction seen in natives at Elizabethville: Imperforate anus in infants, 2 cases. Strangulated hernia, common in the male, 12 cases. Ileocaecal invagination, one case, easy reduction at operation followed by death; bilharzial dysentery present. Iliac volvulus, 2 cases. Peritonitis, several cases in females secondary to gonorrheal infection, other cases due to typhoid.

A. G. B.

Fronville (G.). Les pleuresies purulentes chez le noir. [**Purulent Pleurisy in the Black Man.**]—*Bull. Méd du Katanga.* 1925. Aug. Vol. 2. No. 4. pp. 167–168.

Empyema occurs in the negro as a complication of pneumonia or influenza. There is fever with daily remissions, and nearly always oedema along the vertebral column, and sometimes behind on the affected side. These collections of pus are often localized. The author has operated on 13 cases with 3 deaths. The anaesthesia should be purely local and two ribs should be resected as low down as possible.

A. G. B.

van Nitsen (R.). Deux observations d'abcès de la rate. **Two Cases of Splenic Abscess.**—*Bull. Méd. du Katanga.* 1925. Aug. Vol. 2. No. 4. pp. 168–169.

A patient admitted with pneumonia showed slight jaundice on the 4th day with moderate hepatic and greater splenic enlargement; some toes became gangrenous and death occurred 12 days later. At autopsy the spleen weighed 590 gm. and presented an orange-sized abscess under the capsule which adhered lightly to the diaphragm. The reddish-brown contents contained diplococci, probably pneumococci, and large sporulating bacilli. The second case of splenic abscess was one of typhoid complicated by tuberculosis, in which the patient was not seen alive.

A. G. B.

McRobert (G. R.). **Some Points in the Treatment of Typhus Fever.**—*Indian Med. Gaz.* 1925. July. Vol. 60. No. 7. pp. 318–321. [1 ref.]

The measures advised are based on the study of some 300 cases of typhus among European and Indian soldiers in Mesopotamia, where the author found that much can be done to lower the case mortality by active therapeusis. The chief measures were, rigorous attention to the amount of sleep obtained in the earlier stages, secured by morphine and atropine; the combating of the profound toxaemia by normal saline, intravenously in severe cases; treatment of severe headache by lumbar puncture; and the prevention of venous thrombosis by intravenous infusion of sodium citrate solution. These are the chief points of an interesting practical paper.

A. G. B.

Castellani (Aldo). **Notes on Non-Gonorrhoeal Urethrites.**—*Jl. Trop. Med. & Hyg.* 1925. July 1. Vol. 28. No. 13. pp. 250–252.

The author distinguishes 4 forms of urethritis- traumatic (rare, in soldiers and porters doing long marches), associated with protozoa (spirochaetal, treponemal, etc.), associated with metazoa (larvae, etc.), and mycotic. The mycotic cases he arranges botanically under 7 heads and clinically under 3, according to whether the discharge is white or yellowish, red, or black. Here again the fungi in question are briefly discussed, and illustrative cases are given. Irrigation with perchloride of mercury, 1 in 20,000, seems to cure all these cases.

A. G. B.

Hoffmann (W. H.). Alastrim und Pocken. [**Alastrim and Smallpox.**] —*Deut. Med. Woch.* 1925. July 10. Vol. 51. No. 28. pp. 1154–1156. With 1 text fig. [1 ref.]

The author studied an epidemic of alastrim in Cuba in 1920–22; from some of the earliest patients the corneal inoculation of rabbits was practised and the cases declared to be true smallpox. All the measures customary in that disease were taken, especially the complete isolation of the infected and vaccination of all contacts, and the epidemic was brought to an end. The designation of alastrim was never employed; even in the notifications the word smallpox was used without qualification, and the author considers this to be of importance. He describes his observations on the blood of the patients (this *Bulletin*, Vol. 21, p. 332), and gives an account of the case of a medical colleague which at first suggested influenza. All the cases were segregated for 40 days.

A. G. B.

Alessandrini (Alessandro). Sulla patogenesi del tifo murino. [**The Pathogeny of Rat Typhoid.**]—*Ann. d'Igiene.* 1925. June–July. Vol. 35. Nos. 6–7. p. 558–577. [23 refs.]

By means of several series of experiments, ingeniously devised and carefully performed [for details of which the original must be consulted], the author confirms with the Danysz bacillus the results obtained by Sanarelli relative to the mode of invasion of organisms of the typhoid and cholera group. It is shown that the bacillus cannot, even when taken in large amounts by mouth, survive the action of the gastric juice; that it reaches the duodenum and small intestine by the blood-stream, gaining entrance thereto viâ the buccal and pharyngeal mucosa.

Intraperitoneal inoculation of large doses kills within a few hours: in smaller doses in 2–3 days; in each case the blood invasion precedes the intestinal. Subcutaneous and subconjunctival inoculation are similarly effective by way of the circulation. The result of all the experiments is, therefore, that the enteritis due to the bacillus of Danysz cannot arise by the intestinal route direct under natural conditions.

H. Harold Scott.

Dupuy. Topophylaxie quinine. [**Quinine Topophylaxis.**]—*Bull. Méd. du Katanga.* 1925. June. Vol. 2. No. 3. pp. 112–113.

Topophylaxis in cases of quinine anaphylaxis or intolerance is thus carried out by the author:—

First day, intravenous injection of 2–3 drops of a 10 per cent. solution of "quinine" in the vein of the fore-arm. A constricting band, removed after 5 minutes, prevents its reaching the general circulation. 15 minutes later, injection of 20 cgm. quinine in the buttock.

Second day, same intravenous injection, followed in 15 minutes by 40 cgm. in the buttock.

Third day, same intravenous injection, followed in 15 minutes by 60cgm. in the buttock.

Fourth day, 3 cgm. per os, and 15 minutes later 25 cgm.

Fifth day, 2 cgm. per os, and 15 minutes later 32 cgm.

Seven cases were thus treated with success.

A. G. B.

Young (W. A.). **A Large Vesical Calculus.** [Letters and Answers.]—*Brit. Med. Jl.* 1925. Oct. 31. p. 822.

This mixed phosphatic calculus, found in the bladder of a native who died in the Accra Hospital, weighed over 4 oz. (131 grams); there were no signs of schistosomiasis.

A. G. B.

i. Desnoes (P. H.). **Seasickness.**—*Thirteenth Ann. Rep. Med. Dept. United Fruit Company, Boston, Mass., 1924.* pp. 224–235. [35 refs.]

ii. Jackson (M.). **Elephantiasis of the Breast.** [Memoranda.]—*Brit. Med. Jl.* 1925. Oct. 3. p. 609. With 1 text fig.

iii. King (H. H.). **A Summary of Recent Work on Lobar Pneumonia.**—*Indian Med. Gaz.* 1924. Dec. Vol. 59. No. 12. pp. 607–614. [81 refs.]

iv. Mason (E. L.). **Failures and Successes in the Care of Indian Children.**—*Jl. Assoc. Med. Women in India.* 1925. Feb. Vol. 13. No. 1. pp. 19–22.

v. Murison (C. C.). **"Diagnosis" in Hospitals.**—*Indian Med. Gaz.* 1925. Sept. Vol. 60. No. 9. pp. 407–415.

vi. Wallington (K. T. K.). **Two Examples of Lesions thought to be Rare in Natives.**—*Kenya Med. Jl.* 1925. May. Vol. 2. No. 2. pp. 49–50.

i. An excellent article in which the causes and treatment are fully discussed.

ii. Female patient of the Mendi tribe in Sierra Leone. Weight of tumour after removal, 40 lb.

iii. A valuable summary which must be consulted in the *I.M.G.*

iv. A practical paper full of detail by the Sister in Charge of the Children's Ward, Ludhiana Hospital.

v. A discourse on the best means of keeping hospital records, illustrated by examples. It cannot be summarized.

vi. Aneurism of the thoracic aorta with rupture into the left pleural cavity and aortic valvular disease with death from cardiac failure.

A. G. B.

Azurdia (José). Observations on some Tropical Diseases, and Measures recommended to prevent them in Future.—*Proc. Internat. Conference on Health Problems in Trop. America.* 1924. pp. 979–985. [United Fruit Company, Boston, Mass.]

Blacklock (D. B.). Endemic Goitre and Schistosomiasis in Sierra Leone.—*Trans. Roy. Soc. Trop. Med. & Hyg.* 1925. Feb. 19. Vol. 18. No. 8. pp. 395–416. With 5 figs. on 2 plates & 1 text fig. [64 refs.]

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Guazon (Potenciano). Splenectomy in Twenty-One Cases of Splenomegaly: Technic and Observations.—*Jl. Philippine Islands Med. Assoc.* 1925. Oct. Vol. 5. No. 10. pp. 289–293.

Hauer (A.). Das seelische Moment als hygienischer Faktor. Eine Betrachtung ueber den Feldzug in Deutsch-Ostafrika.—*Beihefte z. Arch. f. Schiffs- u. Trop.-Hyg.* 1925. Vol. 29. No. 1. pp. 155–159.

Katsunuma (S.). Nouvelles recherches sur l'étiologie de quelques maladies au Japon.—*Bruxelles Méd.* 1924. Dec. 28. Vol. 5. No. 9. pp. 308–311.

DE LANGEN (C. D.). De chemische samenstelling der Indische galsteenen en haar diagnostische herkenning door Röntgenstralen. [The Chemical Composition of Gall Stones in the Dutch East Indies and their Diagnosis by Means of Röntgen Rays.]—*Geneesk. Tijdschr. v. Nederl.-Indië.* 1925. Vol. 65. No. 1. pp. 90–102. With 9 plates. [See this *Bulletin*, Vol. 22, p. 68.]

LANGERON (Jean). Etude sur la pneumonie. 1. Discussion de la valeur des groupes de pneumocoques au point de vue de l'immunologie.—*Bull. Méd. du Katanga.* 1924. Oct. Vol. 1. No. 5. pp. 194–197.

LECLERC (Henri). Les plantes médicinales des colonies françaises. Le Papayer.—*Presse Méd.* 1925. Feb. 11. Vol. 33. No. 12. pp. 196–197. With 1 fig. [11 refs.]

MALLORY (Frank B.). Pathology in the Tropics.—*Proc. Internat. Conference on Health Problems in Trop. America.* 1924. pp. 911–913. [United Fruit Company, Boston, Mass.]

MARTIN (Franklin H.). The Gorgas Memorial Institute of Tropical and Preventive Medicine.—*Milit. Surgeon.* 1925. Dec. Vol. 57. No. 6. pp. 610–612.

MONTILLA (Luis Eduardo). Algo sobre el diagnostico y tratamiento de las parasitosis intestinales y de la úlcera fagedénica de los paises cálidos.—*Rev. Med. y Cirug.* Caracas. 1924. Dec. 31. Year 8. No. 81. pp. 32–36. (Discussion pp. 36–41.)

MÜLLER (Reiner). Sobre higiene de los Indios. Inmunidad contra la infección y resistencia innata.—Reprinted from *Medicina.* 1925. Vol. 2. No. 7. pp. 505–513.

PARK (William H.). The Injection of Serum or Plasma from Convalescent Cases of Measles, to prevent the Development of the Disease in Children.—*Proc. Internat. Conference on Health Problems in Trop. America.* 1924. pp. 908–910. [United Fruit Company, Boston, Mass.]

PHELPS (B. M.). Splenectomy: with Report of a Case.—*Ibid.* pp. 635–640. [7 refs.]

POPE (Wm. J.) & HAINES (R. T. M.). Colloidal Kaolin. I. Some Properties of Colloidal Kaolin.—*Lancet.* 1925. May 30. pp. 1123–1124. [1 ref.]

EYRE (John W. H.). II. The Absorption of Toxin by Kaolin.—*Ibid.* pp. 1124–1125. [1 ref.]

RATH (H.). Les Indes néerlandaises de l'Est.—*Presse Méd.* 1925. Dec. 19. Vol. 33. No. 101. pp. 1675–1679. With 16 text figs.

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SYLVAIN (Normil Georges). Haïti et la Médecine haïtienne.—*Presse Méd.* 1925. Feb. 25. Vol. 33. No. 16. pp. 257–260. With 6 text figs. & 1 map.

VASSAL (Joseph). Une mutilation des organes génitaux des femmes noires "banda" Le Ganza.—*Ibid.* Sept. 23. No. 76. pp. 1275–1278. With 10 text figs.

VINCENT (George E.). Tropical Hygiene, an International Adventure.—*Proc. Internat. Conference on Health Problems in Trop. America.* 1924. pp. 6–16. [United Fruit Company, Boston, Mass.]

YAKIMOFF (W. L.), IOUKOWSKY (A.) & SCHIRWIND (S. L.). Au sujet de l'angine de Vincent.—*Bull. Soc. Path. Exot.* 1925. Apr. 8. Vol. 18. No. 4. pp. 304–305. [1 ref.]

REVIEWS AND NOTICES.

KIRKPATRICK (Henry). [M.B., Lt.-Col., I.M.S. (ret.), Late Professor of Pathology and of Ophthalmology, Med. College, Madras; Late Supt. of Govt. Ophthalmic Hospital, Madras.] **Diseases of the Eye. A Manual for the Practitioner.**—pp. ix+132. With 28 figs. 1925. Calcutta: Butterworth & Co. (India), Ltd., 6, Hastings Street. Medical Publishers. [Price 10s. 6d. net.]

This book is avowedly written for the general practitioner, especially for one practising in remote parts, with a view to helping him to treat those eye cases with which he meets in his daily work. Running all through it is the main idea of the interplay between vitiated constitutional conditions and manifestations of eye disease. The general practitioner in Eastern lands has opportunities for observing and studying the eye symptoms of many diseases of which we now know all too little. The ophthalmic surgeon does not see the tropical patient in the acute stage of his illness, and the general practitioner is unfortunately not only hard pressed to get his day's work finished, but is also only too often handicapped by a diffidence in taking up the study of eye symptoms, from an altogether mistaken belief that they are too intricate and obscure for there to be any hope of his understanding them. The present volume will do much to dispel such ideas; it is very readable, clearly expressed and thoroughly sound. Moreover, it comes from the pen of a man with large and wide experience of tropical as well as of ordinary disease. The author has known how to add to knowledge experience and to experience wisdom. Nor is it alone to the tropical practitioner that the book will make a strong appeal. The Great War has flung an aftermath of tropical disease across Britain and her Colonies, and the man who now practises medicine in the United Kingdom, in Canada, New Zealand, S. Africa and elsewhere must be prepared to meet in his daily work with cases across which lies the stain of tropical disease. To such this book will be helpful, but its usefulness will probably be wider still in teaching its reader to learn the daily lessons that a study of the eye has so often to unfold for the enlightenment of the observant physician. "To him that hath shall more be added" is a rule that holds in no department of knowledge more than in medicine, and this small and inexpensive volume can be confidently recommended to all who are interested in improving their professional knowledge. It will open up a fresh field of observation to their minds, whilst introducing them to the fascinations of that aristocrat of medical specialization, the science of ophthalmology.

R. H. Elliot.

BRUG (S. L.). Die parasitologische Diagnostik der menschlichen Fäzes. [**The Parasitological Diagnosis of Human Faeces.**] Ins. Deutsche übersetzt und neu herausgegeben von Dr. G. H. Klövekorn.—8vo. 64 pp. With 8 plates. 1926. Leipzig: Verlag von Johann Ambrosius Barth. [Price Rm. 4.80.]

This work is a German version of a Dutch booklet which appeared in 1922, and was then reviewed in this *Bulletin* (Vol. 20, p. 929). Though described as "newly edited" by the translator, it is actually a free translation of the original—even the misprints in the Dutch version being retained in some instances, though a few trivial changes (mostly omissions) and minor corrections have been made. In scope and treatment of the subject the work is unaltered; and it will doubtless be welcomed by a wider circle than its original, as the language in which it is now presented is more generally read.

It seems regrettable that, in issuing this "new edition," the author (or editor) has been unable to avail himself of the opportunity of bringing the work up to date. In the four years which have elapsed since it first appeared much new information has accumulated. Methods of cultivating intestinal protozoa have, especially, been greatly developed in the interim; and cultivation has, in consequence, afforded new and valuable aids to diagnosis. Any account of "the parasitological diagnosis of human faeces" which ignores this aspect of the matter must, therefore, be now regarded—in so far as the protozoa are concerned—as incomplete. The inclusion of a chapter dealing with methods of cultivating intestinal amoebae and flagellates would have greatly enhanced the utility of the work as a whole.

Clifford Dobell.